



Upper hall, residence at Pleasant Ridge, Mich.; Harry J. Durbin, Detroit, Builder; E. L. Bruce Co., White Oak Block Flooring furnished by Wayne Finish & Lumber Co., Dearborn, Mich.

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# AMERICAN BUILDER

and Building Age

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**AUGUST, 1935**

57th Year

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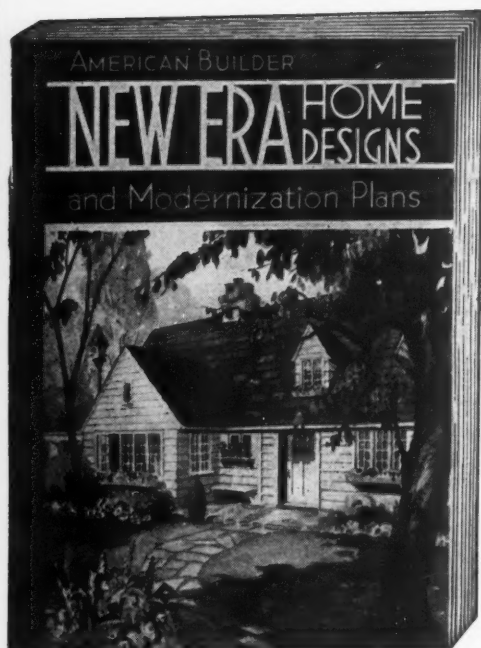
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## It is Your Money that is Being Squandered

**R**EADERS of the *American Builder*, and all persons with similar incomes, cannot begin too soon to realize who is going to pay the *high taxes* necessary to defray current huge government expenditures.

In the fiscal year ended June 30, 1929, total government expenditures—federal, state and local—had increased to *thirteen billion* dollars. This caused nation-wide agitation against high taxes.

In 1929 federal government expenditures alone were four billion dollars. In the fiscal years 1934 and 1935 federal government expenditures alone were *seven billion* dollars annually. For the present fiscal year they are estimated at *eight and a half billion* dollars. Assuming the same state and local expenditures as in 1929, total government expenditures this fiscal year will be *seventeen billion* dollars.

And now there is no nation-wide agitation against high taxes!

Why? The people are being fooled by the politicians. The federal government is financing its "emergency" expenditures by selling bonds. *But taxes will have to be increased to pay the principal and interest of these bonds.* Politicians are dangling "share-the-wealth" schemes as means of getting the money. *But they cannot possibly get enough from the wealthy.*

**T**HE following statistics are careful estimates:

Wealthy persons—with incomes over \$25,000—receive about 7½ per cent of the present total national income, or \$3,340,000,000 annually. *All of this would not defray one-half of the present annual expenditures of the federal government alone, or one-fifth of all federal, state and local government expenditures.*

Persons with annual incomes from \$1,500 to \$25,000 now receive 66 per cent of the national income—\$30,000,000,000 annually, or almost *ten times* as much as the wealthy. They are the great "middle class." They include a vast majority of readers of the *American Builder* and their customers. They have always paid most of the taxes. And no matter how high the wealthy may be taxed, *the middle class will always have to pay the bulk of all taxes.*

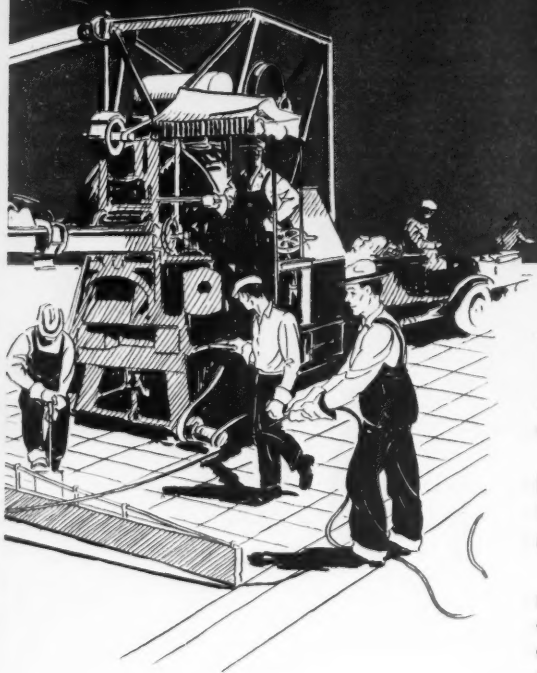
**I**S there evidence in your community of wasteful government spending for "made-work" and relief? If so, don't let the politicians fool you. *Sooner or later, you are going to pay your full share of it in increased taxes.*

Tell the squandering politicians in Washington and elsewhere who are talking glibly about "social security" and "sharing-the-wealth," that it is *your* money they are squandering—and what you intend to do about it!

*Samuel O. Drumm,*

CHAIRMAN,  
AMERICAN BUILDER PUBLISHING CORPORATION  
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So we simply say this—when you have a particular concrete problem on which you want accurate and current information, we'll be glad to hear from you. We think that this cooperation is part of our job—and while it doesn't go through those kilns, we make it an ingredient of every barrel of Atlas and Universal cement that goes to make good concrete. Try us out!

237

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## AMERICAN BUILDER AND BUILDING AGE

# Building Plans Through the Lumber Dealers

THE problem of how to get architectural service to the people has been worrying the best minds of the A.I.A. ever since the depression put a stop to the planning of monumental buildings and turned up *home building* as the big fertile field ahead. With single family dwellings costing this spring an average of only \$3,777\* each, the specialists in individual architectural designs can't figure how they could make a living serving such small clients, even if these home seekers were willing to add from 5 to 10 per cent to their building budgets to pay for special plans—which they are not.

At the same time the American home buying public is more style conscious and discriminating than ever before. Good small home designs are wanted and the building industry is taking steps to meet the need through the duplication and wide distribution at low cost of well drafted working plans. These are prepared, in general, by well qualified licensed architects and are furnished locally to contractors and carpenters by the lumber and building supply dealers.

Thus, here again, as with most building materials, the local retailer proves to be the key to successful distribution and proper use.

### FHA Approves Stock Plans

The Federal Housing Administration men are aware of this situation. The staff architect of one of the FHA district offices recently wrote this publication:

"We are faced with the problem in this state of providing plans and specifications for low cost housing, ranging in price from \$2,000 to \$4,000 on which loans are desired under the National Housing Act. The main difficulty we have is that our architects are located in the larger towns and cities leaving wide areas in which there are no technical men capable of making designs for this class of work.

"We are endeavoring to solve this problem by providing our field force and local chairmen with catalogs of stock plans from which these people can select a design and obtain the plans and specifications at a very low cost.

"These low-priced houses offer quite a broad field for this class of work, and we would appreciate any informa-

tion you can give us regarding stock plan books which we might obtain. We would require about 125 copies of these books, and from the present prospects, it would appear that there was a very good market for the sale of these plans, as well as an opportunity to assist these people in building homes."

In reply to this we wrote:

"The situation outlined in your letter is well known to us because we have encountered the same so many times in practically all sections of the United States. Direct service from architects in the small home field is practically impossible and non-existent. Stock plans of good design are to be preferred to the amateur planning efforts of the individual home seekers; they are superior usually to plans produced by contractors, carpenters and builders.

### Good Service from Retailers

"The retail lumber dealers have become a recognized source of home plans in the small house field. In quite a number of the states the Retail Lumber Dealer Associations are furnishing their members a very satisfactory architectural service consisting of well illustrated plan books, each plan backed up by a service at nominal cost, which furnishes blueprinted working plans and type-written specifications."

The *American Builder* does not furnish stock plans nor is it affiliated in any way with any plan service. The many choice home designs illustrated each month in this publication are offered entirely for their helpful and suggestive value to the many architects and competent home designers who read this journal. We want to assist in every way we can the movement for better home design in this country. *Building plans through the local lumber dealers* seems to be the most practical way of getting good home architecture to the people.

Possibly the architects themselves, through their state or city chapters, might be able to work out some similar arrangement for a popular service of somewhat larger designs—so that these could be given wider distribution. An arrangement to duplicate certain selected plans and make them available elsewhere would encourage the use of better designs and the employment of architects.

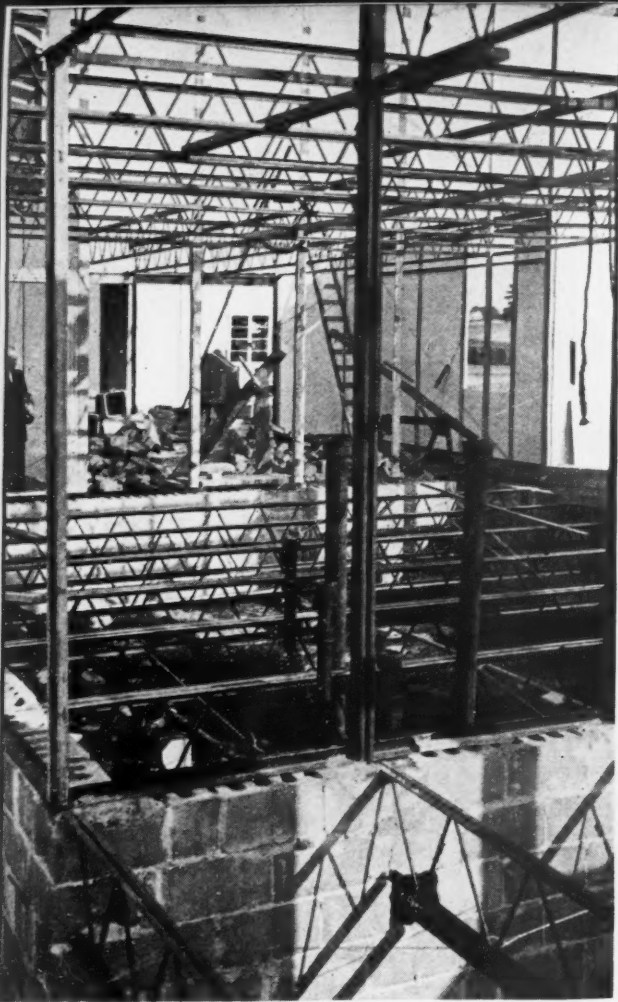
\*U. S. Bureau of Labor Statistics compilation of 3,940 new houses for which permits were issued in April, 1935, in 792 cities.

# Prefabricated or

THE photographs on these pages were taken by *American Builder* on July 12 at Boston, where American Houses, Inc. is building three "prefabricated" houses. This firm has the closest thing to a prefabricated house; but, as the pictures show, these houses are not assembled and built at a factory and shipped complete to the job as so many people seem to think.

Materials come to the job ready-cut and are assembled by local men. The unions have not yet decided whether the work should be done by carpenters or steel workers.

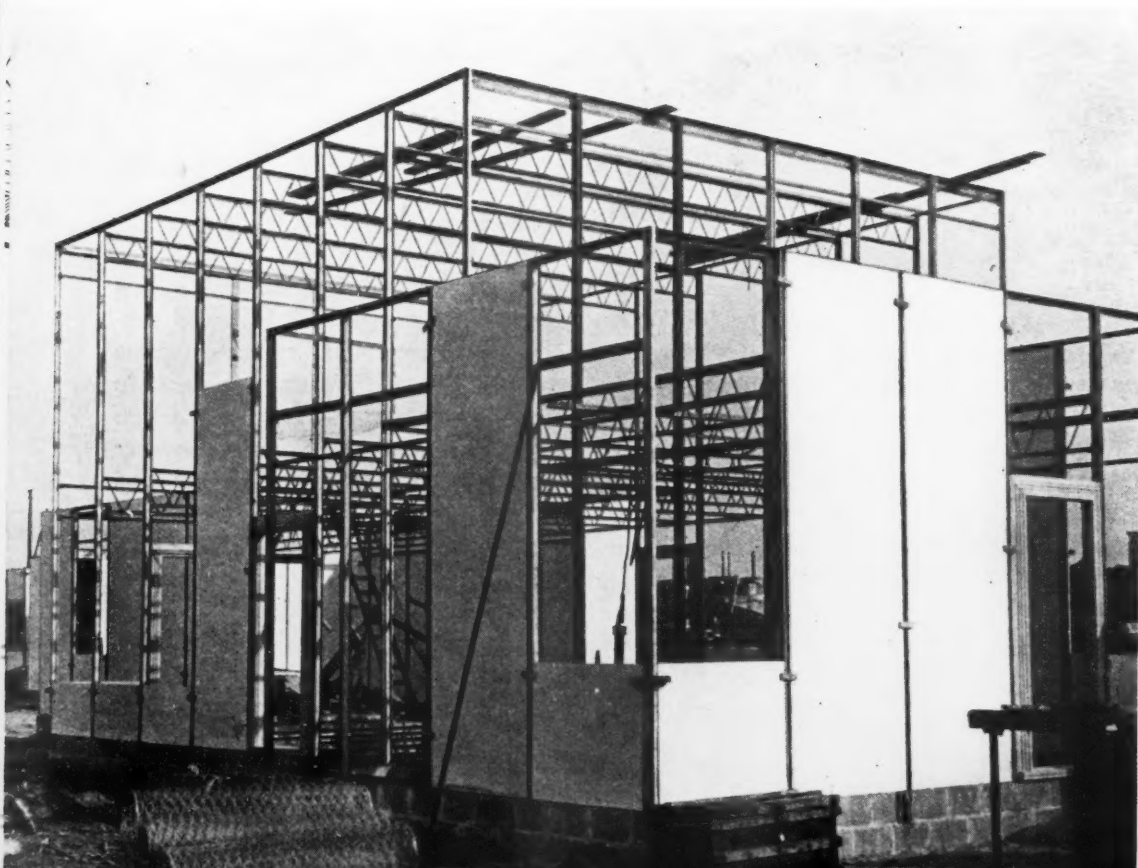
A lightweight steel framework is used and lightweight floor and roof trusses. Standard panel wall sections fit into the steel



STEEL FRAMEWORK of American Houses, Inc., two-story Motohome under construction in Boston. Lightweight steel members are used into which standardized panels fit. Water and sewer pipes are run in customary fashion.



A PILE of Motohome wall panels delivered on job at Boston. Panels are made of four 1/2-inch thick sheets of cane fibre insulating board cemented together with 1/8-inch layers of cement asbestos on outside and inside of panel.



VIEW of two-story Motohome at Boston photographed July 12. Lightweight frame is erected and standard 2 1/2-inch thick panels set in mastic. Wood frame door is shown being placed at right. Exterior joints are covered with aluminum strips.

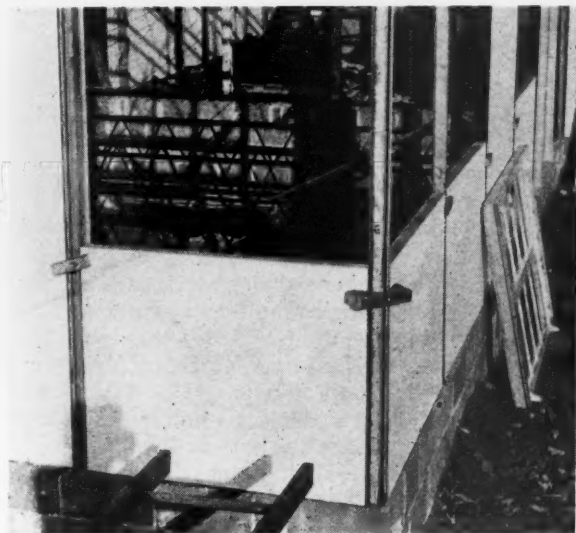
# Just Ready-Cut?

frame. These panels are made of four sheets of half-inch thick cane fibre insulating board stuck together, to which is cemented one-eighth-inch layers of cement asbestos to form the finished outside and inside walls.

These panels are fairly light, can be cut with a hand saw and have high insulating value.

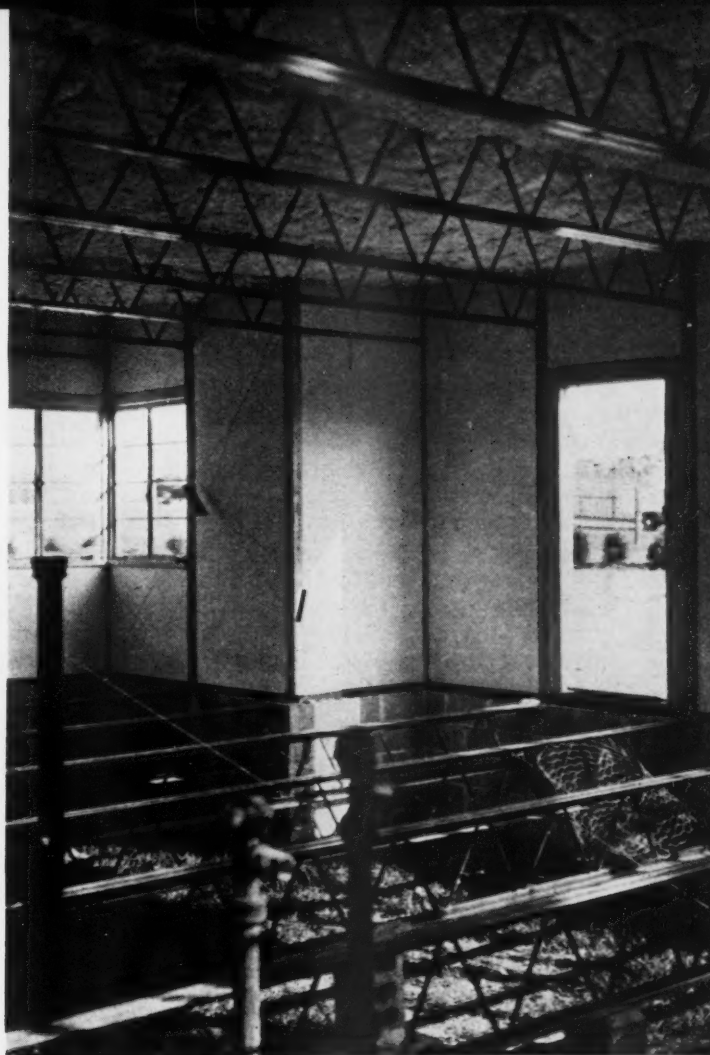
Floors and roofs are built of two-inch gypsum planks, reinforced and provided with shiplapped joints.

An interesting feature of the roof is the fashion in which the insulation—which consists of bulk rock wool—is hung just below the gypsum plank upon chicken wire stretched between the steel joists. (Continued to page 62)



CORNER DETAIL showing fashion in which cane fibre wall panels are set between steel frames. Temporary fasteners shown are replaced by aluminum strips to be later bolted in place in a bed of mastic.

ONE-STORY Motohome at Boston showing ceiling construction consisting of 2-inch gypsum planks laid upon light-weight steel trusses. A layer of rock wool insulation is held up by chicken wire. In foreground is seen pile of gypsum planks used for floors and ceilings. These have shiplap joints and are laid upon steel floor and ceiling joists.



INTERIOR VIEW of Motohome showing rock wool insulation at ceiling held up by chicken wire. Walls are of 2 1/2-inch thick panels made of cane fibre insulating board, with cement asbestos exteriors and interiors which form the finished surface when panels are put in place.



# New Models Bring Building Boom

"We analyzed the 7 obstacles to home building and now offer buyers something new," reports MARTIN L. HOLMAN, Cincinnati home builder.

**D**URING the past year we have been hearing a great deal about a "building boom" that is, or was just around the corner. The spring of 1935 is here, and while it is true that there has been a seasonal increase in the number of building contracts awarded, it is equally true that this seasonal spurt in the building business does not bear the earmarks of a "boom" nor anything like it. Yet we all instinctively feel that a "boom" is due, in fact past due, and in this state of mental bewilderment we are at a loss to account for the reluctance on the part of the public to buy our product. We therefore proceed to make excuses and draw inferences such as the following:

- (1) The last five years of depression have made people over-timid in investing their money.
- (2) The people *haven't* any money after five years of depression.
- (3) We will have to wait until people get back to work and business improves generally before we can hope to sell new construction.
- (4) The tendency of families is to separate; to break up into smaller units, renting a garage and a 2 room flat, and live in the automobile. What do *they* want with a house?
- (5) In the last five years home owners have been reduced to the extremity of surrendering their homes rather than face the ignominy of foreclosures and deficiency judgments. They are satiated with owning their own homes.
- (6) Tax spending politicians have thrown home owners into consternation with the threat of higher and yet higher taxes to support welfare and charity enterprises for the benefit of non-home-owners.
- (7) People bought real estate on a "boom" market,

Martin L. Holman, who has uncovered a new home market.

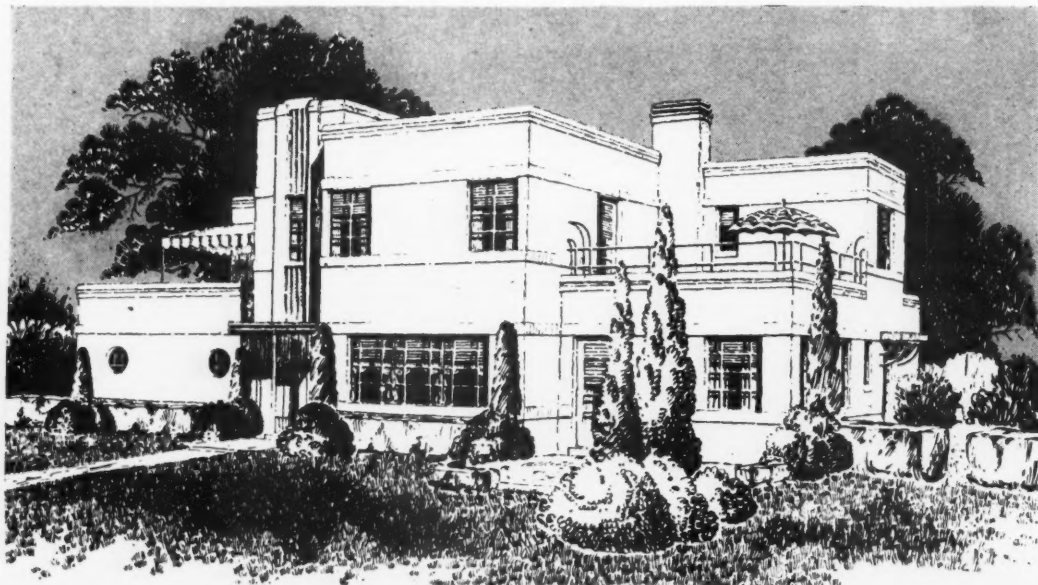


and during the depression saw their equities vanish, and are permanently cured of repeating the experiment.

Et cetera, et cetera, ad infinitum.

The tragedy is that all the foregoing is the plain truth and is not to be understood as a parcel of false inferences. The writer is acquainted with hundreds of individuals who were dispossessed to satisfy financial greed, and whose efforts to save their homes have furnished the world with an epic of heroism and martyrdom not to be exceeded by anything yet recorded in the economic history of this country. Picture a home builder contacting a member of this group with the object in view of building him a new home! No, brothers, it simply can't be done.

Yet this is not what is wrong with the building business. The home builders themselves have been hit harder than the home owners in that they have had to repossess thousands of homes, assuming large mortgages as well as seeing their equities in second mortgages (representing past profits) evaporate entirely, and frequently be-



Modern motif 10-room home designed by Albert V. Walters, Cincinnati architect, to be built by the Martin L. Holman Building Company for William Toenges on Van Zandt Road.

coming the victims of deficiency judgments due to their failure to terminate their liability on first mortgages assumed by their customers. Yet in spite of the heavy punishment he has taken, the home builder is on his feet again, ready to build if the public will buy. To this attitude the public is responding rather gingerly. Where is the building "boom"?

I am firmly convinced that a greater co-operation between home builders, architects and supply houses is of paramount importance if the building business as we know it is to survive. There are threats and menaces in the air about pre-fabricated houses sold by chain stores, and in an ever changing world where today things are accomplished which we deemed impossible yesterday, that which we deem impossible today might become an accomplished fact tomorrow. The interests of the home builder, the architect and the supply house are identical, and the time has come for the home builder to take his place in the sun along with the rest of recognized professions, to deal with allied industries on a basis of equality like any other recognized profession, and not as an ultimate consumer who must buy at any price demanded and sell at the best price offered. In other words the home building industry must be managed like any other industry if it is to survive.

The fact is that the home building industry as well as the rest of the world is confronted by new conditions. Mighty things are impending in the industrial field. During the depression the busiest places on earth were the laboratories and the designing studios. The designers and commercial artists did not seem to be conscious of the fact that business was at a standstill. They were busy designing new ideas, modes and patterns of beauty. Engineers were busy making one unit of energy accomplish the work of two. Better automobiles were produced for less money and exceeding in beauty and design anything previously attempted. Stand at any busy corner and watch the automobiles as they pass. Five out of every six were built and sold during the depression. That indicates very clearly that enough of the people are in a financial position to purchase homes if sufficiently home-minded.

The astute minds of the automobile industry after listening to a lot of talk about the "saturation point" being reached in the midst of a "boom market," deliberately ignored such economic philosophy, and proceeded to teach the world a lesson in indomitable, American business

courage by producing a better engineered and more beautiful commodity which they proceeded to sell by the hundreds of thousands on a *depressed* market. Here then is the automobile "boom." But where is the building "boom"? While the automobile industry was making a conquest of the market and grasping more than its share of the public's fugitive dollar, the home builder was taking it on the chin with oriental fortitude, paying ruinous prices for material with Chinese meekness, realizing a starvation profit on his product in wooden despair, and lapsing into a Micawber-like, comatose, mental state of waiting for something to turn up!

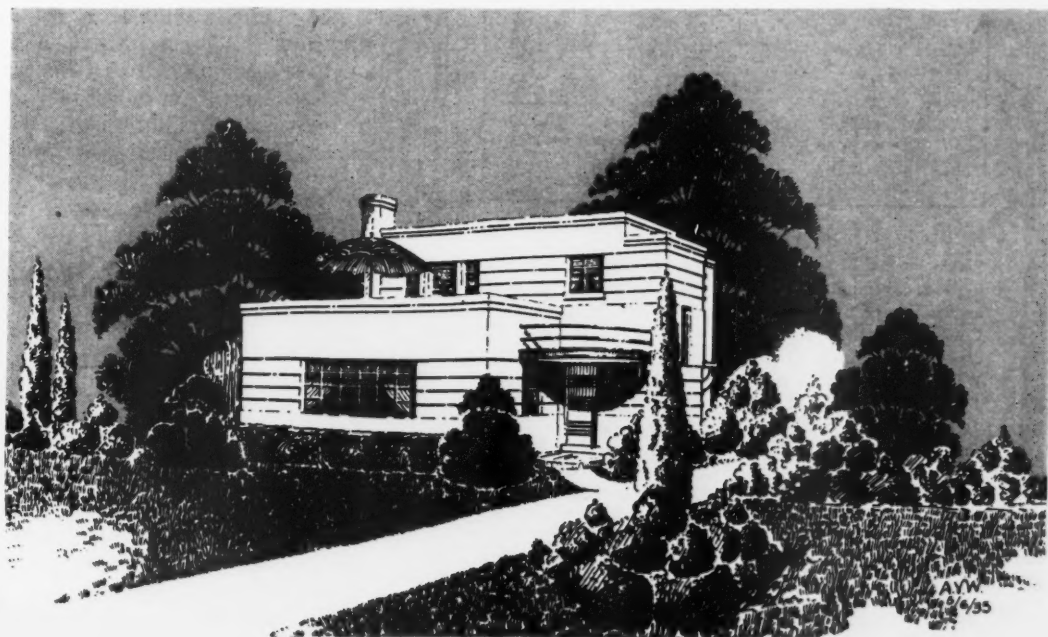
This is all strongly indicative that in order to rejuvenate the building industry something new must be introduced. New building fields must be opened up, new materials must be used for construction and a new class of people must be brought into the building market. New beauty must be built into homes. Homes will have to be of such quality, design and price as will attract those people who are accustomed to trade in their automobiles at the end of every year for the then prevailing model. Automobile "fans" so to speak, must be converted into home "fans." Let's make a bid for that money.

Just as soon as stocks show some signs of life the gambling public will be at it again; never fear, they will try their luck again. Let's make a bid for that money. You will be amazed, if you will investigate the amount of money that is subject to the proper impulse, *if you can discover or create that impulse*. Beauty and quality have ever been, always will be, and now particularly *are* the commodities that meet with the least sales resistance. Home builders, remember, your greatest competitive commodities are automobiles and stocks. Compete with automobiles in beauty and quality and compete with stocks in relative price.

By this time, the readers of this article might possibly have arrived at the conclusion that the author has been indulging himself preaching fine theories, and are (quite legitimately) ready to indulge themselves now in a few facts. My answer is, that it is the only explanation that *fits* all the facts, without any concession being made to hopes or desires. Those facts I now propose to set forth for the benefit of those seeking a remedy for business stagnation in our field.

Acting on the assumption that those who should compose our potential market are—as is the rest of the world

(Continued to page 70)



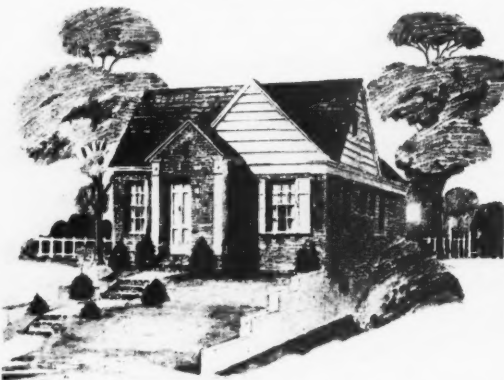
A smaller home design by Albert V. Walters which the author finds has a strong appeal in today's market.



# OPERATIVE BUILDERS

A monthly department for the men who plan, erect and equip homes for sale

at GIBSON  
VALLEY STREAM, L.I.



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## Gibson Makes Home Buying Easier Than Paying Rent

Features Clear Statement of Monthly Carrying Charges in Attractive Mailing Piece—Building Low-Cost Colonial and English Six-Room Bungalows

**W.** R. GIBSON, president of The Gibson Corporation, home builders of Valley Stream, L. I., believes in making home buying easy. One of the best examples of this philosophy carried into practical use is the financial set-up shown in the folder on this page.

This folder was prepared by Mr. Gibson for prospective home owners and in it he gives an unusually complete statement of the costs of buying a home including taxes, insurance and water. These costs are all totaled and reduced to a monthly carrying charge which is less than rent for comparable houses in his section.

Gibson has built more than 1400 houses on Long Island and is a long-time reader of the *American Builder*. This year he decided to feature low-cost, story and a half, six-room bungalows in the \$5,000 class. English and Colonial architecture of great charm is featured, and the houses are compact, well planned. In selling homes in today's market The Gibson Corporation features the greatest advance in home financing this country has made—the elimination of bonuses and mortgage renewal charges. Using the long-term government financing plan the company is able to get carrying costs down to a very reasonable figure. What is even more important, they state that **THERE WILL BE NO BONUSES, NO RENEWAL CHARGES.**

According to Mr. Gibson, "the FHA financing plan," as featured in his folder, "has been very well accepted by prospective home owners. They appreciate the advance this form of financing is over the old mortgage and second mortgage system with its frequent renewal costs.

"We expect a heavy fall building season this year," said Mr. Gibson. "Business was very good this spring.

**THIS MAILING FOLDER** used by W. R. Gibson is a very effective selling piece. All the costs in connection with the house are clearly shown, including taxes and insurance. Both the total cost and the total monthly payments are indicated.





SIX-ROOM, story and a half Colonial brick bungalow being featured by The Gibson Corp., Valley Stream, L. I. It is compactly planned and given a salable exterior. Convenient and livable plans shown at right.

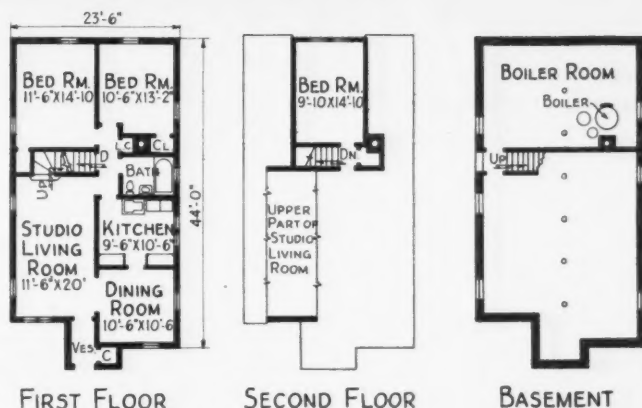
fell off slightly this summer, but will be much better, we anticipate, this fall."

At the present time the company has 17 houses under construction or recently completed, and expects to run this up to 100 in the course of a year's operation.

Gibson-built homes feature a large studio living room, although an alternate plan is available which provides a standard type for those who do not want the studio. Most people like it, according to Mr. Gibson.

An interesting feature of the Gibson houses is the way in which they are kept high above the ground so that the first floor bed rooms are eight feet above the ground level. The front yards are terraced and landscaped in an attractive fashion. The six-room and bath house is able to take care of the average family. And at a total carrying cost of about \$40 a month, this puts the house in a class where it can be afforded by many people now paying rent for inferior apartment accommodations. The houses are equipped with radiators, steam heat with jacketed boiler, copper hot water tanks, copper leaders and gutters, asphalt shingle roofs, oak flooring, built-in kitchen cabinets, colored tile walls and fixtures in kitchen and bath room. There is cross ventilation in most of the rooms and ample closet and storage space.

The second house featured in the folder is the "May-



fair" brick bungalow with similar floor plan (shown above) differing in the architectural treatment of the exterior. Stucco and half-timbering with cut stone decoration give an English character to the design. The Mayfair costs slightly less than the Colonial—the figure being \$4990, with total monthly payments of \$39.27 which will pay off the mortgage in 20 years.

On the mailing piece are also listed important facts regarding Gibson which would be of interest to prospective home buyers. These include information about transportation facilities—time and number of trains; that 700 families live there and stores, schools and churches are convenient; recreation features such as beaches, golf courses and parks are nearby.



## **2nd Floor Overhang Gives Extra Space**

A SPACIOUS SECOND FLOOR with large master's bedroom is achieved by overhanging the second story a foot in both front and rear as shown in the accompanying illustrations. Although the overall dimension of the first floor is only 26 by 27 feet the interior has an air of spaciousness that has proved very popular with customers.



REAR VIEW of a row of three Friendship Homes on Long Island showing Colonial treatment and overhanging second floor. Photographed June 1.



FRIENDSHIP HOMES, INC., Flushing, L. I. are featuring "new fashioned homes with old fashioned spaciousness." They have large rooms and closets, efficiency gas kitchens, concrete foundations, brick and stone veneer walls, slate roofs, copper gutters and leaders. Details also include sectional parquet floors, fully tiled bathrooms with tile stall shower, American Radiator Company one pipe steam system, weather stripping, Armstrong Linoleum kitchen floor on felt, table top gas range, Standard kitchen sink, Duro strainer and tile drain boards, Standard brass plumbing, washable wall paper.

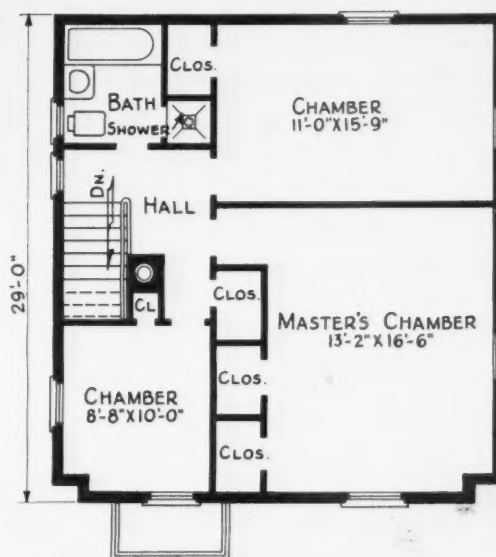
Air-Temp air-conditioning equipment made by the Chrysler Company is being widely advertised but had been installed in only one house of the eight nearing completion on June 1.



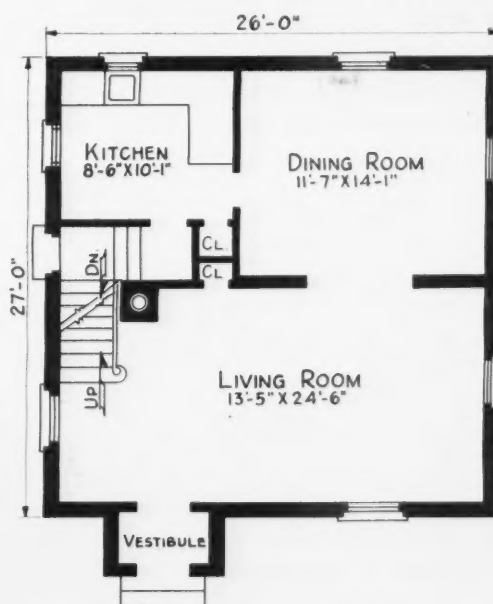
A ROW OF FRIENDSHIP HOMES Under Construction Early in June.

## Air Conditioned "Friendship Homes"

MITCHELL G. ITTELSON and Irwin Friend, builders of Friendship Homes at Flushing, L. I., are advertising "air-conditioned homes" similar to those shown on this page, complete with oil burner, cooling and ventilating equipment for \$5990. Eight houses are under construction and the builders plan to erect 80 this year. They are featuring Air-Temp air-conditioning equipment, a product of Chrysler Motors.



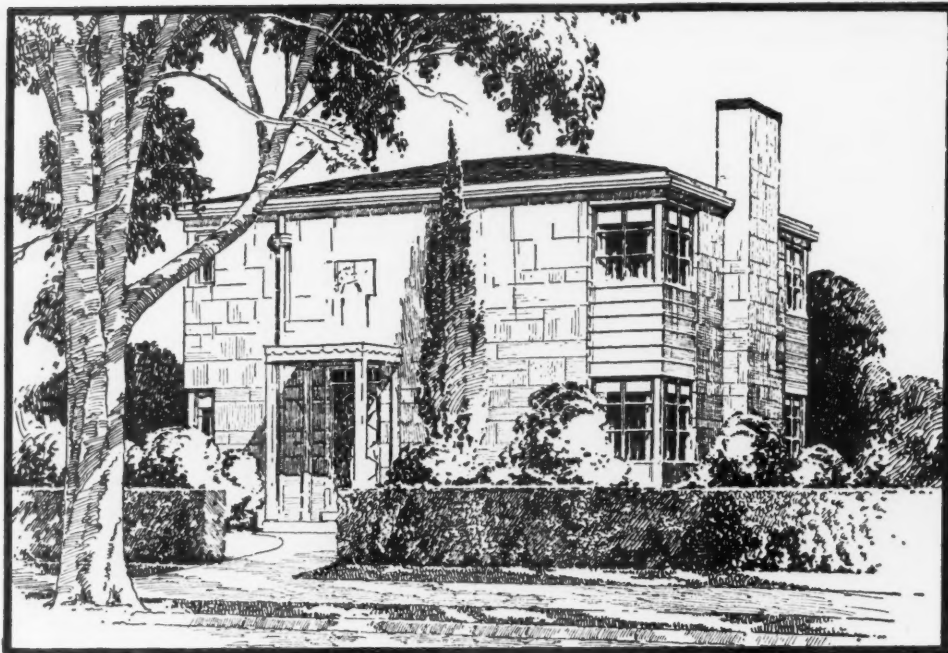
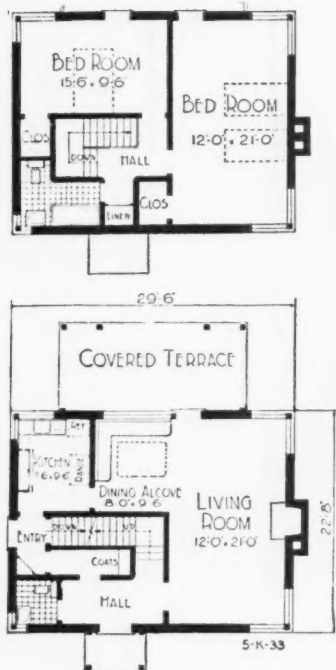
SECOND FLOOR PLAN



FIRST FLOOR PLAN

SPACIOUS ROOMS are provided by this plan and second story overhang. Cost Key is 1.428—114—726—31—22—11.





Cost Key is 1.456—104—668—29—20—11

## Modernism in Concrete

Cost Key Design below is  
1.456—127—984—41—  
25—10

THE MODERN HOME illustrated above has the simplicity of design which reflects its solid, concrete construction. Windows are arranged in the corners to give the light and visibility of bays. An interesting treatment of the entrance relieves the plain wall surface. In plan, the house offers modern efficiency with no waste of space; the dining alcove and living room are combined to give a good sized room. Below, the flat roofed, compact design is more modern in line. An extra bedroom and bath can be finished later on the second floor when five rooms are needed. The deck is used as a roof terrace with a covered porch for shelter. One room serves for living and dining; the breakfast nook, however, is large enough to seat four. Architects' Small House Service Bureau Plans, 5-K-33 (upper) and 4-K-24 (lower), are from "22 Low Cost Concrete Homes," a new plan book published by the Portland Cement Association, Chicago.

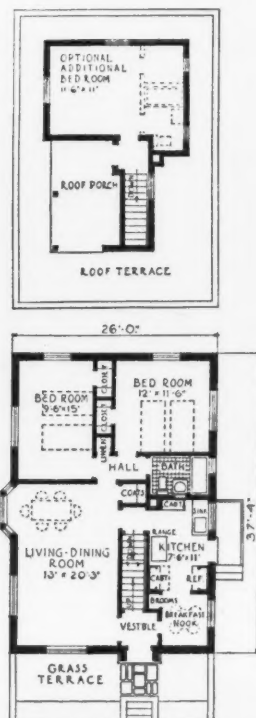
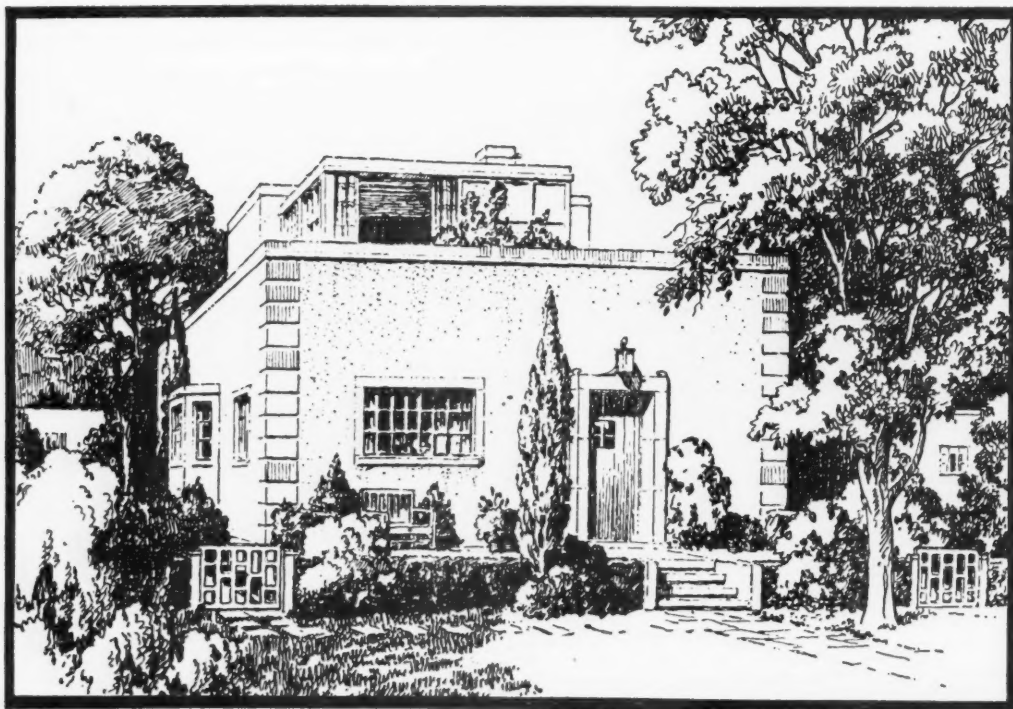




Photo by Gustav Anderson

## It's Not the Cost

IT IS NOT THE COST but the quality of the design and workmanship that gives charm and permanent appeal to a home. The dutch colonial detail above is the result of fine design by architect Maxmillan R. Johnke, Hempstead, L. I. architect, and good workmanship by D. L. Hood, local contractor. The details of this and other houses that appear in the American Builder design section are worthy of study because they illustrate how style and satisfaction can be achieved in really low cost homes.



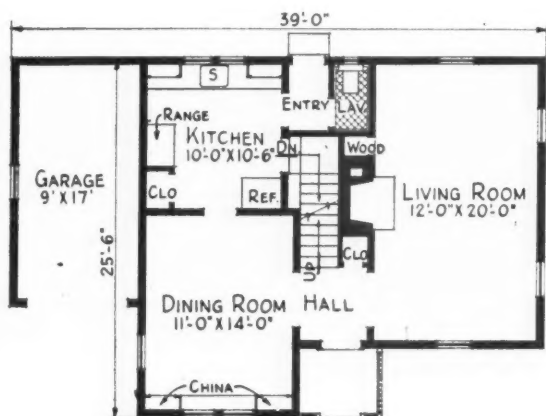


Photo by Gustav Anderson

HERE IS EXCEPTIONAL STYLE APPEAL in a house costing well under \$5,000. It is located in Hempstead, L. I., and designed by architect Maxmillan R. Johnke. Exterior is of shingles with red wood trim. It has tile kitchen, bathroom, oak floors, Curtis Colonial trim, one pipe steam heating system and copper leading with sweated fittings, Kohler fixtures. It was completed May 25, 1935.

Cost Key 1.619—130—680—30—20—13

## Compact Quality



FIRST FLOOR PLAN



SECOND FLOOR PLAN





## Low Cost Charm

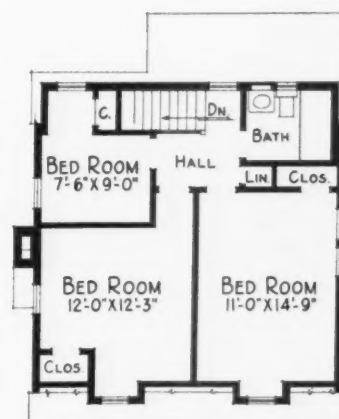
WITH A VERY SMALL FLOOR AREA architect M. R. Johnke of Hempstead, L. I. has given this house exceptional living qualities. The cost is in the \$5,000 class and it was completed in March, this year. It has brick veneer exterior, asphalt shingled roof, copper leaders and gutters, gas range, steam heat with Kohler boiler. The builder is D. L. Hood, Hempstead contractor.

Cost Key 1.500—112—662—29—21—13

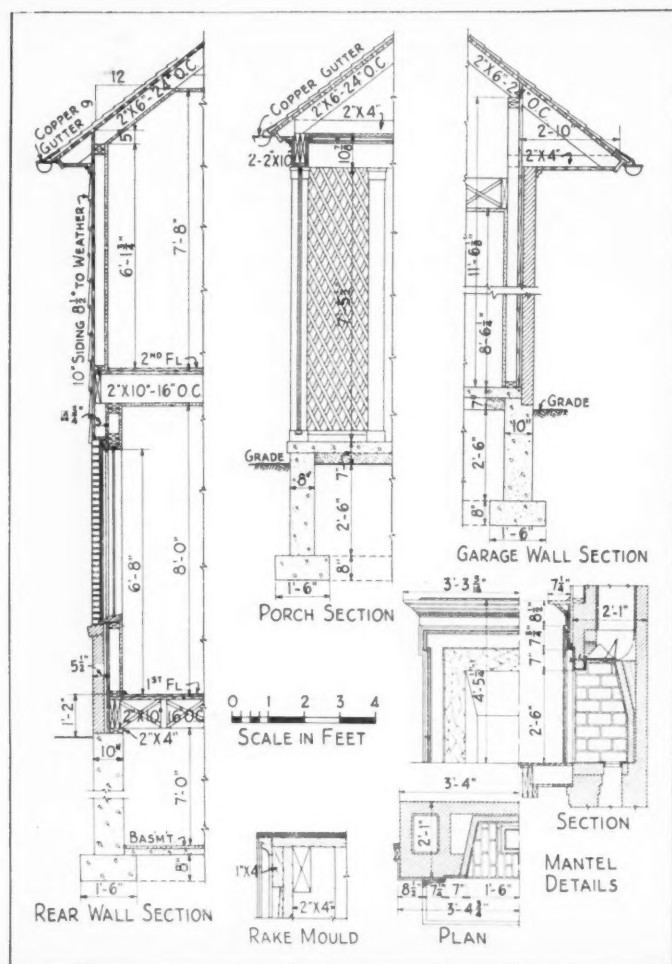
ALTHOUGH OVERALL dimension is only 24 by 30 feet, three bedrooms have been secured on second floor—one a child's room. The open stairway at end of living room increases the appearance of spaciousness.



FIRST FLOOR PLAN



SECOND FLOOR PLAN



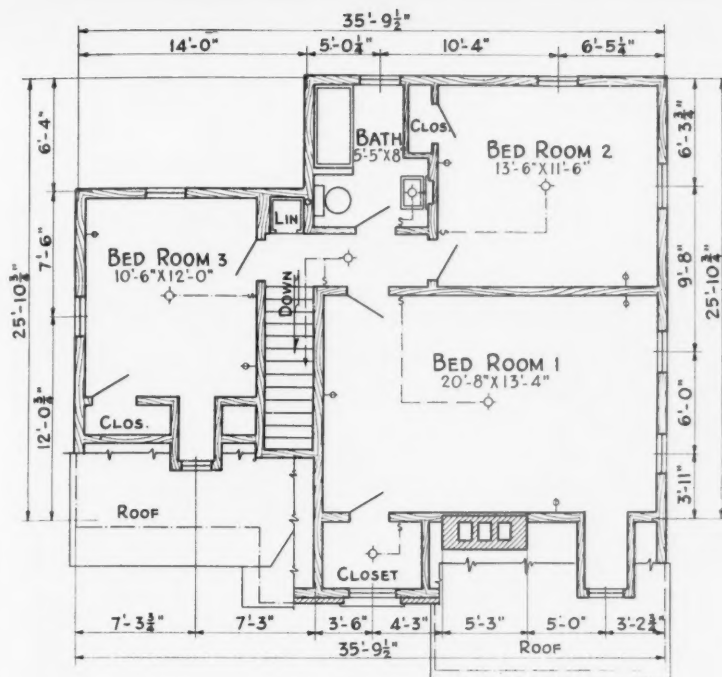
## Curtis "Key Home," No. K-9

Six-Room and Garage Design of English Lines Selected Because of its Good Looks and Low Cost

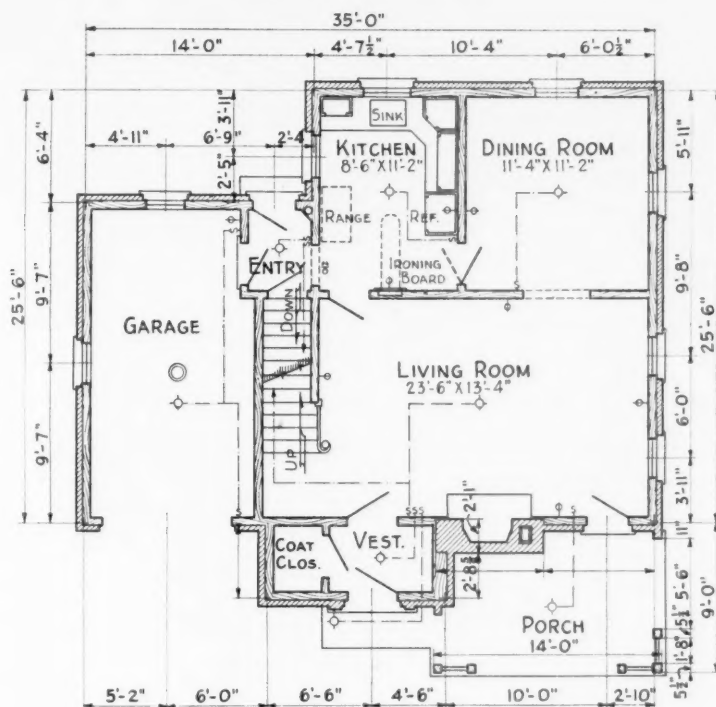
CURTIS CO. SERVICE BUREAU, Architect

This example of careful planning rates as the August "House of the Month" because it meets so well the current demand for economy combined with good looks, convenient arrangement and thorough construction. The designers point out that it combines a bit of the English and of the Colonial with pleasing results. With a width of 35 feet including the garage, this house will go nicely on a 50-foot building site. The construction indicated is face brick veneer for the first story and the front gable with 10-inch siding laid 8 1/2 inches to the weather for the second story gable ends. It is suggested that this house should be painted white with green shingled roof to go with brown face brick. As with all the "Key Homes," prominent manufacturers have contributed their best engineering and planning experience to make it possible to build and equip this house at low cost through the efficient use of stock sizes and models.

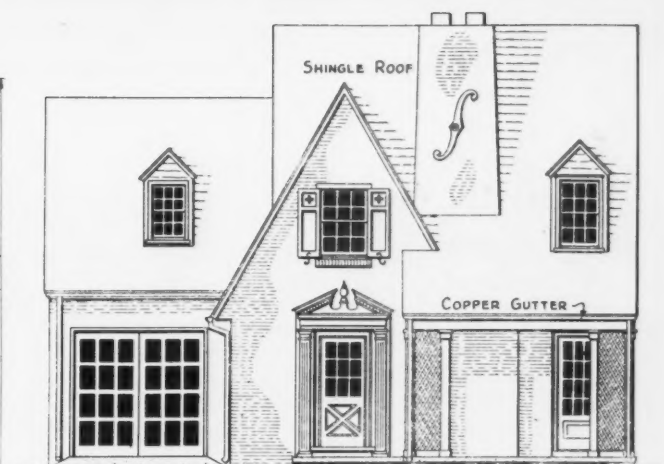
Cost Key is 1.680-134-680-30-24-16



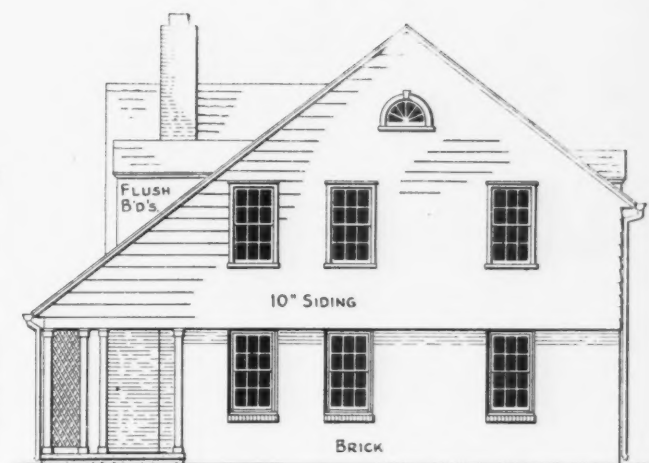
SECOND FLOOR PLAN



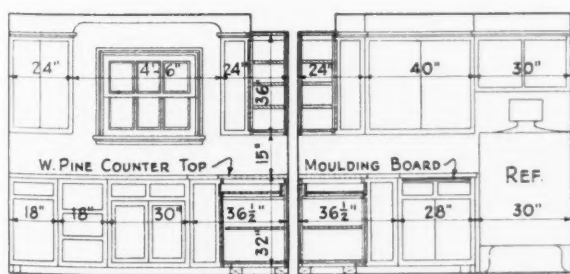
FIRST FLOOR PLAN



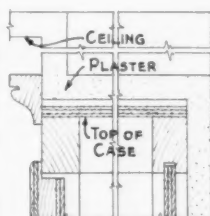
FRONT ELEVATION



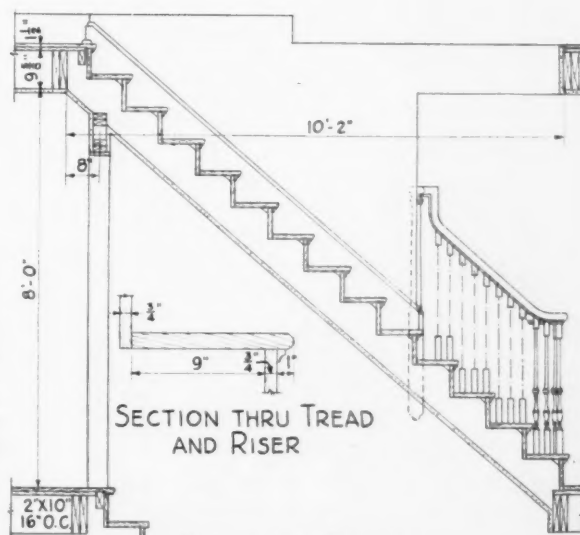
LEFT ELEVATION



DETAIL OF KITCHEN UNITS



SECTION THRU KITCHEN UNITS



DETAIL OF STAIRS



# Drier Air for Summer Comfort

## New Mechanical Equipment for the Home Can Solve the Problem of Summer Air Conditioning

By V. L. SHERMAN

Department of Mechanical Engineering,  
Lewis Institute of Technology, Chicago

IN PRESENTING the equipment shown in Figures 1 and 2 there is a comparison to be made between their neat efficiency in action and the neat efficiency in action of the Federal Housing Administration. Time was when the loosely knit or even scattered actions of several in authority went into the building and financing of a home. And we realize now what a waste and misdirection of heat there was in the old style central furnace with its numerous long leaders and lengthy smoke pipe in a basement that would have become an oven had not the leakage through the walls, sills, and frames been enough to compensate.

But we have a different set up now when it comes to building and financing a new home. All things pertaining to efficiency in financing, construction, and direction are embodied in the structure of the F H A. Completeness is essential. The loans shall come under single, long-term mortgage. The home as a structure shall provide fully for comfort and durability. And the direction of the work shall be under one authority, the general contractor. The general contractors are realizing the advantage of this method of handling the problems of home building. For the satisfaction of the owners, the financiers, and for themselves they are including equipment that ensures comfort. Some equipment of this type they may have previously considered as only adding interest and discount costs to financing. In that light such equipment was not given reasonable consideration

and was, sometimes, pretty much unknown to the general contractor.

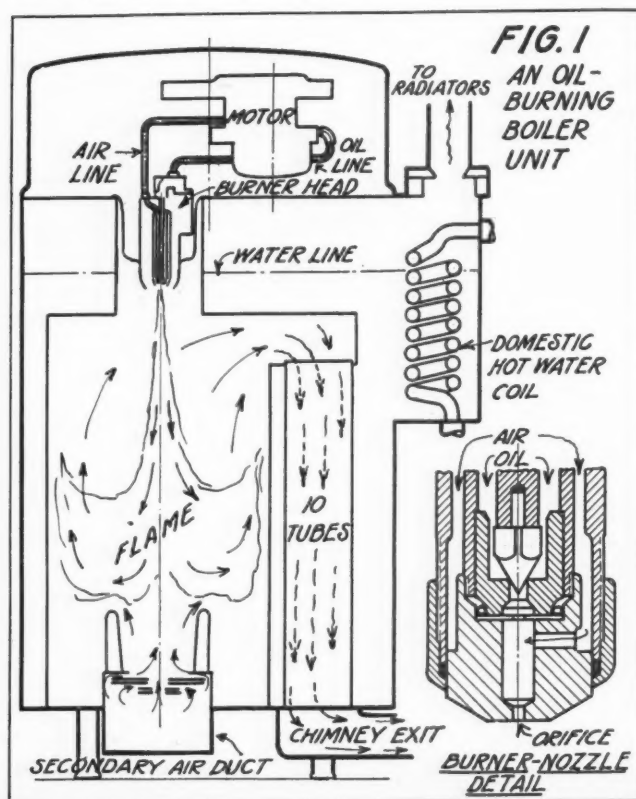
Now that the loan is made through a single mortgage and the value of the home as a security over a long term is considered there is plenty of reason for getting thoroughly acquainted with the best of modern equipment. The best of this equipment is, in character, like the provisions of the Federal Housing Administration. It makes for completeness and efficiency. This trend of recognition accounts for the report of one company whose business was large but generally apart from residential work, "—a considerable amount of the 1935 totals is from F H A jobs, while a portion of the remainder is indirectly traceable to F H A activity."

In order properly to provide for our wants we must anticipate them. So during the summer it is just as well to look into the heating equipment for the winter to come. This part will be brief, however, and Figure 1 is meant chiefly to show the wide contrast between the older types of heating equipment and some of the more modern units. Besides being a complete unit for heating and hot water supply with a very minimum of outer surface, this unit shows the improvement which has come in the handling of fuel and air to perfect the combustion. The heat is used and is not thrown away. Such a unit makes it possible to control the various allotments of heat, a feature which would interest the owners of the older types.

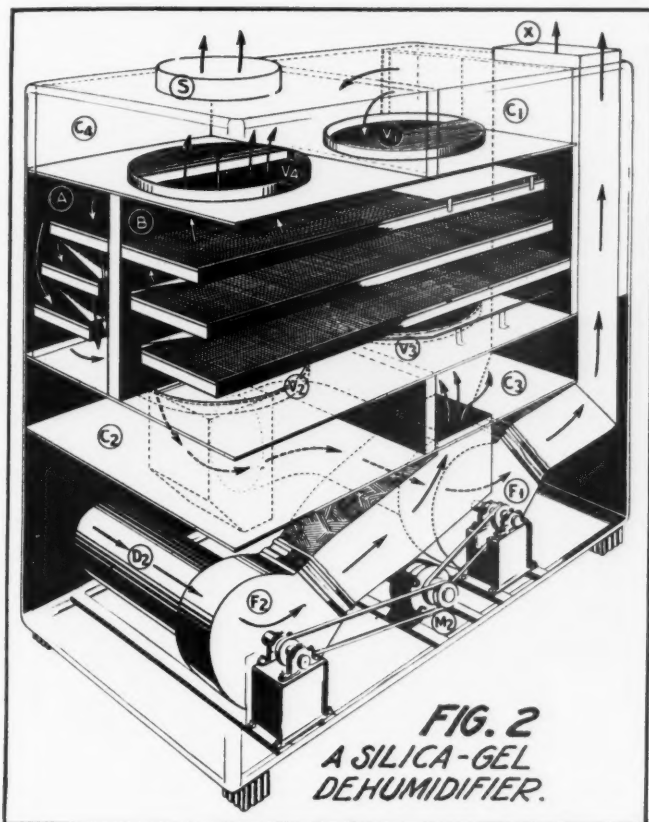
To change the subject from that of heating to that of summer comfort it might do to consider the general present attitude of the contractor toward air cooling and air conditioning. A really good contractor is conservative but is not reactionary. He is willing to consider a demand if he is certain it is a real one. Thus in connection with the future field of air conditioning equipment in the home, builders have asked whether such equipment is not too expensive, too little recognized by the public in general, in too formative a state, or really desirable. These are honest questions, and the contractor's interest is alive. This helps us a long way toward the solution.

In residential work air cooling or conditioning in its first cost may be considered as an additional unit which is to operate in conjunction with the heating plant. Such equipment may be installed at the same time as the heating or provision can be made for its installation later on. So long as winter air conditioning for the home, that is, the even distribution of clean and properly humidified air, has become a direct demand by home owners, there is little chance that the next step will be much retarded. The additional cost is not unreasonable, and its addition to that of proper winter heating is comparatively small.

When real estate editors point out to me the rapid growth of air cooling and air conditioning in public and semi-public rental space; and when the equipment engineers for railroads show me that nearly two thousand cars are now equipped for air conditioning; when the hotels, restaurants, and theatres are very generally taking it for granted as necessary, I can't help but think that



## HEATING—AIR CONDITIONING—PLUMBING AND WIRING



**FIG. 2**  
**A SILICA-GEL**  
**DEHUMIDIFIER.**

the so-called period of education for the public is pretty far along.

As to the chance of the industry being in too formative a state let me mention that the gentleman responsible for the "Carrier rational psychrometric formula" on which the chart, Figure 4, is based, began his important work in Buffalo just about thirty-four years ago. And that so far as air conditioning, cooling, and refrigeration go, their newness in the home has been merely a strangeness. When the folks get to know them they will soon forget they ever were strangers.

As to air conditioning being really desirable. To those who have studied the matter from the point of industry there is convincing evidence that air conditioning for comfort alone more than pays back through increased efficiency and decrease of ailment. In hospitals its value is quite convincing. The recognition of air conditioning in the point of health is accepted by all who have studied the matter.

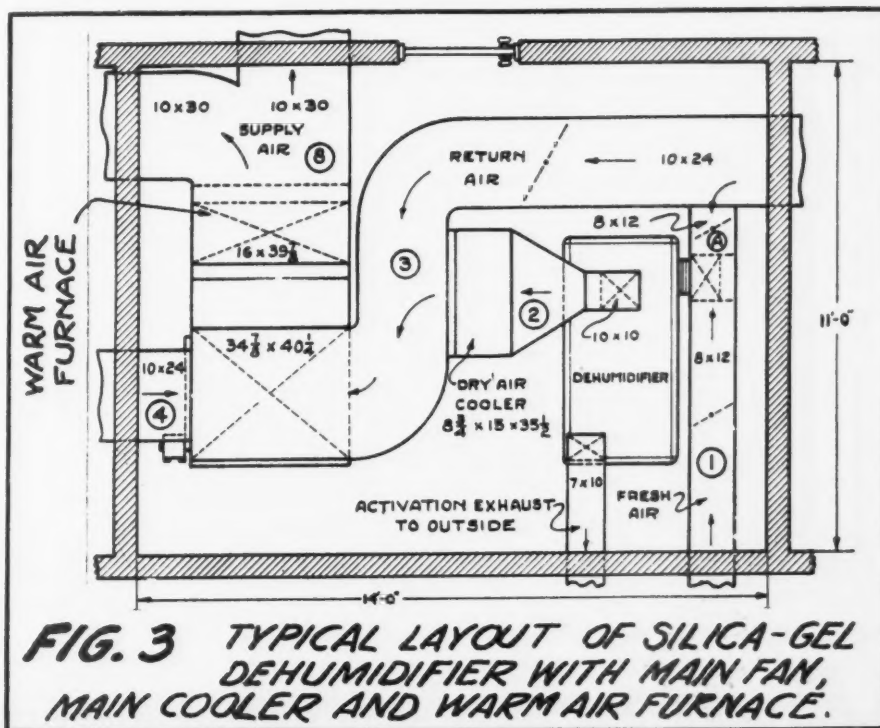
A point none too often considered in the matter of cooling and air conditioning by those who anticipate using equipment is the matter of moisture. Just as there may be too much "water" in the common-stocks of some corporations, or just as there used to be too much "water" in financing a home, so may there be too much water in the air for our comfort regardless of the temperature.

In some equipment for air conditioning the excessive moisture is removed by passing the air through a very finely divided spray of chilled water. Here the moisture condenses on the vast surface provided by the tiny particles, and the air is brought to where it contains only the amount of moisture which air at the spray temperature could hold. In Figure 4, for example, the air at the point A with a temperature (dry bulb) of 95 degrees and a relative humidity of 50%, would be reduced in heat, sensible heat that can be registered by a thermometer, until the dew point is reached at B. As heat is still withdrawn by the spray the temperature is still further reduced which means that more sensible heat is taken away. But as the amount of moisture is reduced by condensation over the surface of the tiny particles of the spray the now saturated air loses in latent heat as well. Thus the point C is reached with the air still saturated, but at a temperature of 65 degrees and containing just the right amount of moisture for a 60% relative humidity when the air will have been reheated to 80 degrees.

Or by passing air over cooling coils the moisture will partially condense out and drips off just as it does from the cold water pipes in a house on any hot, humid day. Though not so accurate in point of control this system is often very desirable.

But, referring to Figure 2, we find another method. Technically this system of removing the moisture from the air is known as adsorption, (not absorption). Merely remarking that the action of taking the moisture out of the air has to do with capillary attraction and vapor pressures we will say that silica-gel is so minutely porous that one cubic inch of it is said to contain nearly 50,000 square feet of pore surface, and that it can absorb nearly 40% of its weight of water.

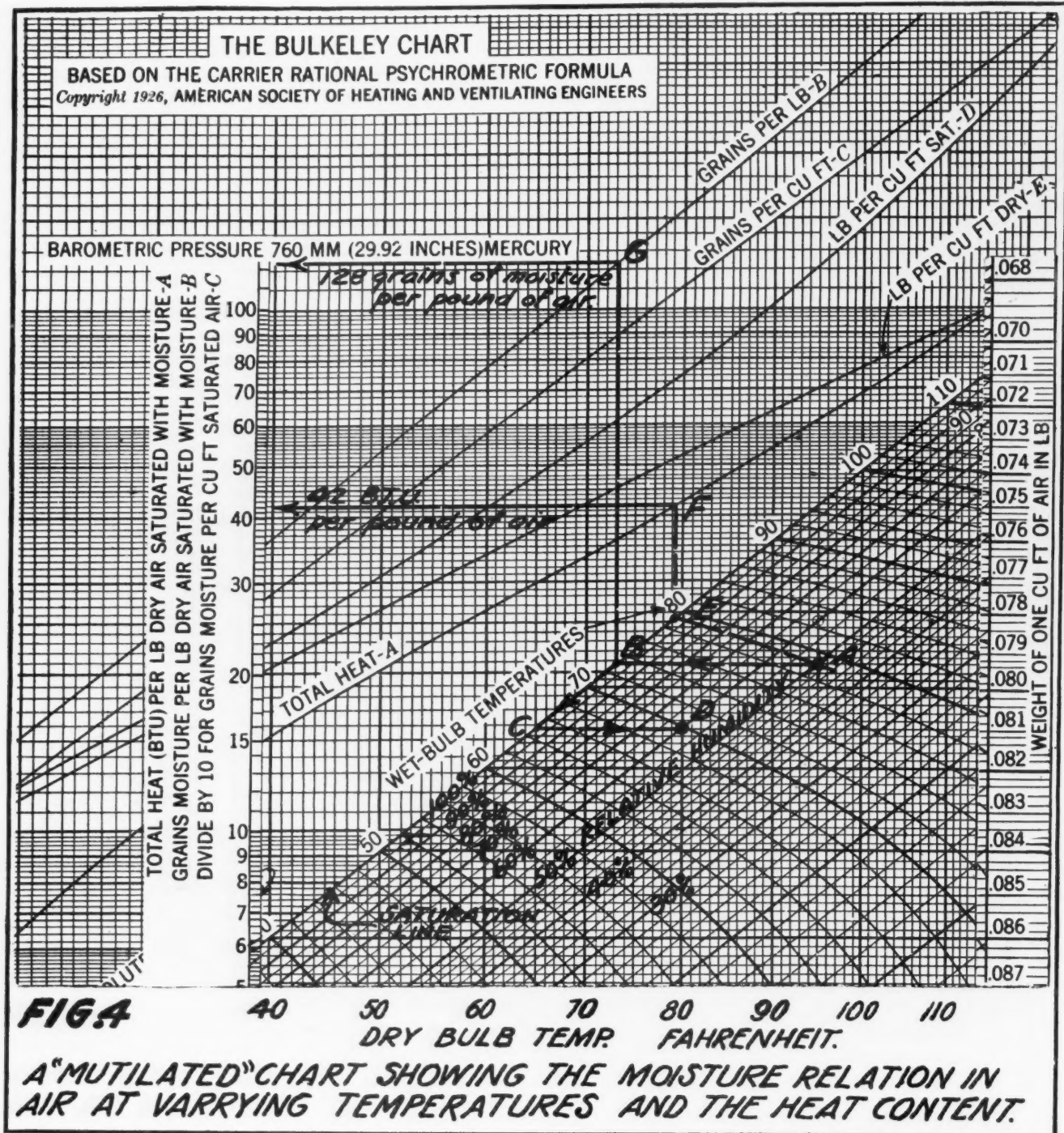
With this system as shown in Figure 2, and in connection with a central plant as shown in the layout, Figure 3, a controllable amount of moisture is removed. The operation is a 3-part cycle, and mechanically controlled.



**FIG. 3** TYPICAL LAYOUT OF SILICA-GEL  
DEHUMIDIFIER WITH MAIN FAN,  
MAIN COOLER AND WARM AIR FURNACE.



## MECHANICAL EQUIPMENT FOR 20-YEAR FINANCED HOUSES



The air is passed through one side of the dehumidifier where for about ten minutes the silica-gel adsorbs moisture to its efficient point. In giving up its moisture the air gains in sensible heat what it loses in latent heat. But, minus the moisture, it is then delivered to a cooler.

When the point is reached where the silica-gel holds as much moisture as it should, the valves designated V are shifted to direct the air through the other compartment. Now the moisture loaded silica-gel is subjected to a stream of heated air which is capable of picking up the moisture from the silica-gel as the temperature rises. When the moisture has been sufficiently removed and disposed to the outside with the heated air, a cooling

draft is passed through the compartment to bring the silica-gel to its efficient temperature. On this the valves again shift and operations continue. The cycle takes about ten minutes time. A definite control of the amount of moisture in delivered air is very desirable at times. This method accomplishes it. Wherever gas for heat is available at reasonable cost the system should be very attractive.

The scales on the chart, Figure 4, have been moved in to make the lines and numerals more readable. By following the arrows from A, or from any other point, we can determine the amount of moisture in the air and the amount of heat. The weight per cubic foot or the cubic feet per pound are found from this chart.





The old building with vacant store next door.

## Main Street Beautified

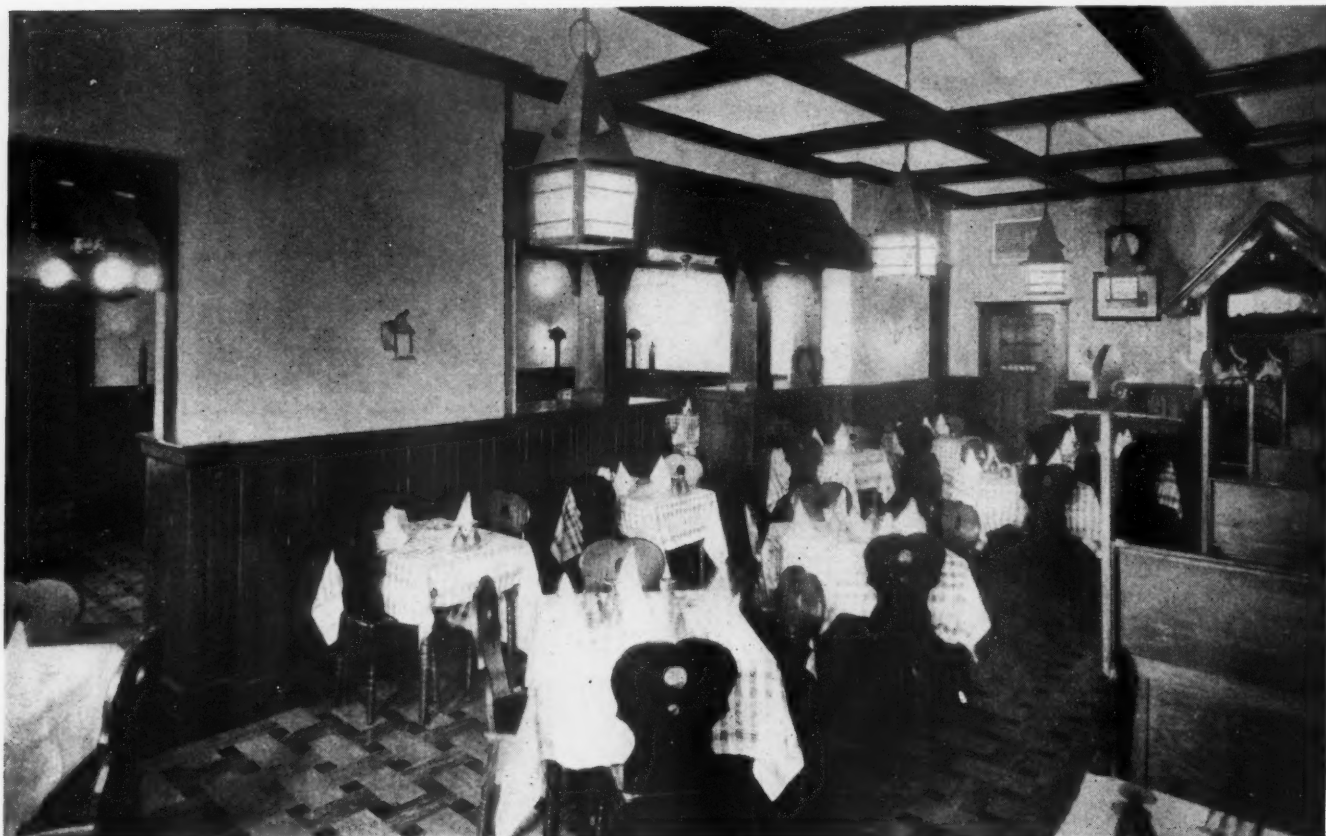
THOUSANDS OF PROPERTY OWNERS on Main Streets all over America are thinking of improving their buildings as the result of the new FHA amendment which permits loans up to \$50,000 for this purpose. Here is a good example to show restaurant prospects. The old Stork's Nest Restaurant was given a new home which greatly helped its business . . . and just see what it did to improve the Staten Island, N. Y., street on which it is located.

# MODERNIZATION

MODERNIZED AND REBUILT restaurant on Staten Island, N. Y., in which the adjacent building was improved and the entire structure given a new and attractive front. M. G. Usan, architect.

More Main Street  
Details Next Page





INTERIOR OF THE MODERNIZED Stork's Nest Restaurant, Staten Island, N. Y., with beamed ceiling, attractive interior details.

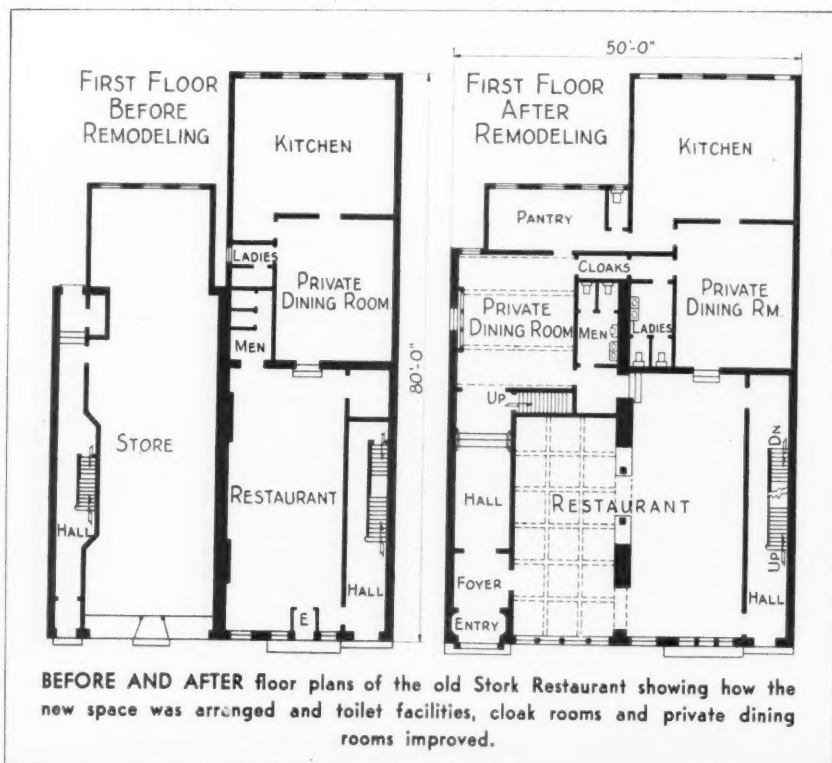
## "Old Stork" Gets New Home

Adjacent building taken over; entire structure remodelled

THE old Stork Restaurant on Staten Island, N. Y., needed a new home. Contractor J. F. Johnson and architect M. G. Uslan undertook to give it one recently and in doing so they not only helped the restaurant owner's business but greatly improved the looks of the entire street.

The old restaurant was too small and poorly laid out and its talent facilities, waiting rooms and private dining room space was very limited. The owner decided to purchase the rundown and vacant building next door and add it to the restaurant. The fashion in which the architect and builder produced one striking facade from the two old buildings is shown on the preceding page.

Structural changes to the old portion of the restaurant were very slight. The work consisted primarily of cleaning up the old brick, painting the half timber work and shutters. The old adjacent building was similarly pointed up and painted and a new half timber gable treatment added. The work was relatively inexpensive considering the effectiveness of the changes made.

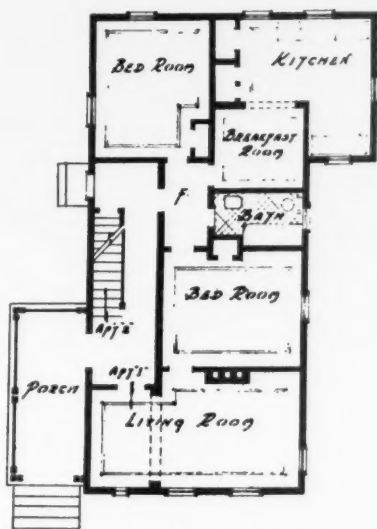




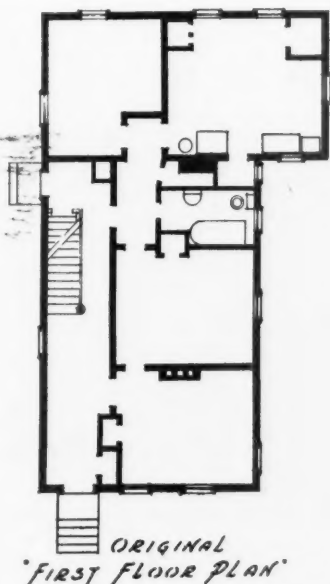
The Top-Heavy Old Structure

## 3rd Floor Off— House Now Rented

Yonkers, N. Y., Modernizing Job Re-  
stores Value. Rebuilt as 2-Family House,  
and Both Units Rented



"FIRST FLOOR PLAN"  
"AFTER ALTERATIONS"



"ORIGINAL  
"FIRST FLOOR PLAN"

**T**HIS old three story house was held by the Yonkers Savings Bank, and was a money loser. It was also an eyesore to a good residential section. The bank turned the job over to Edward Fleagle, architect, and Hoyt & Miles, contractors, of Yonkers. They removed the old third story and replaced it with a sloping roof covered with asphalt shingles. Circular windows improved the gable ends. The old front entrance and steps were removed, and a new side porch added to improve the proportion and as well provide an additional renting incentive.

On the inside the living rooms were enlarged, breakfast nooks were added, and the entire structure renovated and brought up to date.

The resulting attractive two-family home has rented quickly to desirable tenants and the bank now owns a sound income-producing property which is an asset to the community.

Cost of the entire alteration including interior and exterior decorating, also grading and planting, was \$3,568.

This is an interesting example of good work by the architect and contractors, and might well suggest to other bankers the best way to move unprofitable properties they may be holding.



THE REMODELED HOUSE after third floor was removed, porch added and house restyled. Hoyt & Miles, contractors. Edward Fleagle, architect.





RUGGED strength is pictured in this Toronto, Ont., three-car stone garage with Spanish tile hip roof. The simplicity of the design is the secret of its charm. The three doors are from the Overhead Door Corp.



ABOVE: "A woman's touch" operates these Over-the-top doors supplied by the Frantz Mfg. Co. through the Eclipse Lumber Co. of Clinton, Iowa, for this modern garage built by the Hanson Construction Co. Each door is composed of 2 four-foot doors, angle-ironed together.

TO RIGHT: Motor storage de luxe on a Chicago North Shore estate. Architect, S. S. Beman, Chicago; contractor, John Davies, Wilmette. These two doors are constructed of oak, 14' 6" by 8' 6", each divided into 8 panels for operation with Barber-Colman Overdoor equipment, radio controlled.



## What's New in Garage

WITH THE AUTOMOBILE industry enjoying its biggest year since 1929, new interest is growing in secure and convenient housing for these new cars. Home garages are being planned and built, and there is a decided tendency to give to the garage a style in harmony with the dwelling it serves. The makeshift shelter or revamped shed of earlier motoring days is fast fading out of the picture.

Practically every home today has its separate garage or built-in motor room. Both comfort and safety call for substantial construction with plenty of insulation and some source of artificial heat for cold weather.

Probably the most important feature of any garage is its door. Garage doors are large and heavy, yet to be satisfactory they have to be very easily operated. Women do much of the driving these days; so the home garage doors must be hung and counterbalanced in such a way that a woman can open or close them easily. At the same time a tightly fitting door is required so that it can be securely locked and

TRANSFORMING old swinging doors into one-piece upward-acting doors is a big industry for enterprising carpenters and contractors. To right is a well handled job at Springfield, Mass., now equipped with Coburn Trolley Track Co. equipment. A choice of weight-operated or spring-operated equipment is offered.



## Designs and Door Rigs

made both thief- and storm-proof.

The current trend in garage doors is toward the upward-acting type, although the side folding and sliding arrangement still is preferred by many. The upward-acting doors are counterbalanced either by means of weights or springs so that a very little effort is required to raise or lower them. Some are hinged in horizontal panels to roll up and back along the ceiling, and some operate as a rigid unit, swinging upward and inward on bell crank arms. This latter type is particularly useful in remodeling old side hinged doors to change them to the upward-acting style.

On these two pages garages equipped with these door devices are illustrated. Although differing in size and treatment, each one is well built and designed to solve adequately the problem of car storage according to the needs of the family, two most important features considered being convenience of location and equipment and design which does not detract from the rest of the property.



ABOVE is shown the garage approach to the residence of R. H. Wilcox, Columbus, Ohio. Architect, Benham & Richards; contractor, Petzinger & Schleppi, all of Columbus. These garage doors are electrically operated Kinnear Rol-top doors of special panel design.



TO LEFT is illustrated interior view of motor room in the Edmund & Dickson Funeral Home, Danville, Ill. Architect, Harvey Skadden; contractor, C. W. Wilson, both of Danville. These garage doors are fitted with Allith-Prouty 4090 upward-acting door hardware.



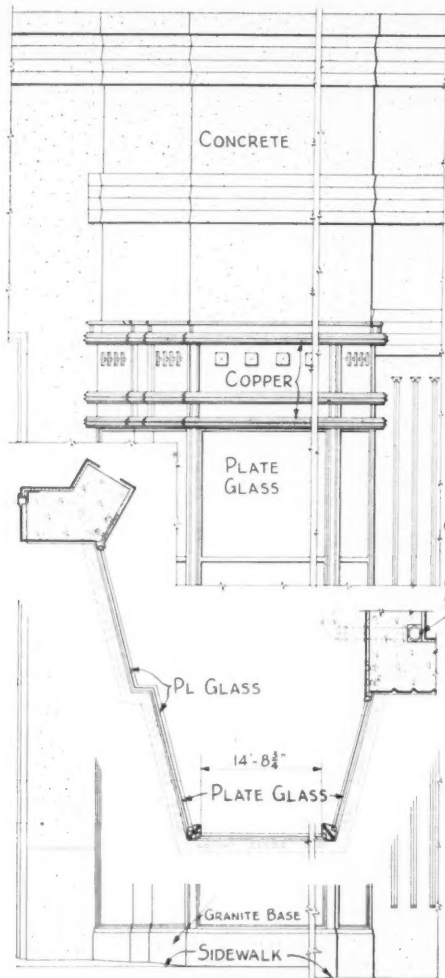
## Effective Modern Store Design

IN PRESENT DAY selling competition, the attractiveness of the store, both interior and exterior, is a large factor in merchandising success. Display windows are very important in their function of getting the attention of prospective buyers and inducing them to enter the store to buy.

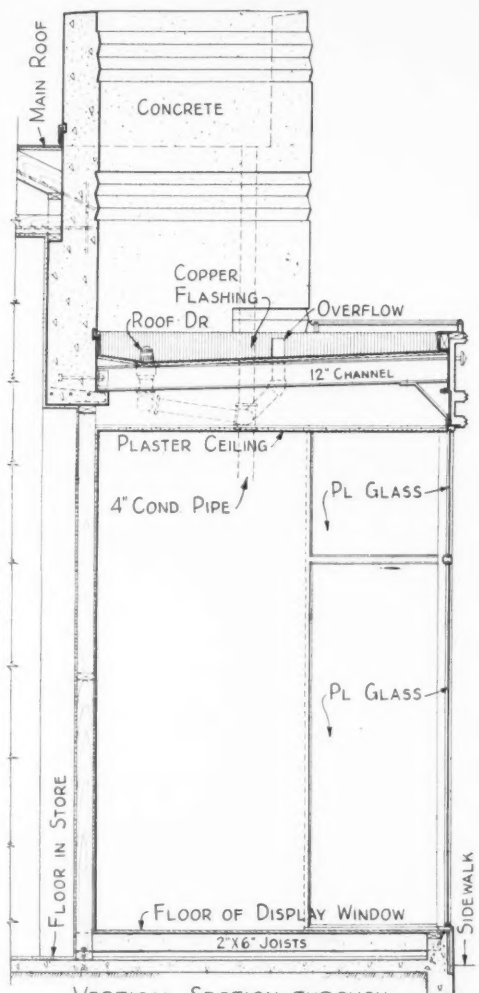
The O'Melveny Building, Los Angeles, is a good example of how modern store design can be effectively handled. This group of shops was planned chiefly around

the Switzer Store since the owner who was erecting the building had already leased this well located corner space to this concern before the plans were started.

John Parkinson and Donald B. Parkinson, Los Angeles architects, then had the problem of designing the structure so as to accommodate best a high grade women's specialty shop on the corner with show windows conspicuous enough to attract the automobile traffic which passes this location.



PLAN AND ELEVATION OF DISPLAY WINDOW AT ENTRANCE



VERTICAL SECTION THROUGH DISPLAY WINDOW

AT RIGHT: Plan, elevation and section drawings of the display window at the entrance of the Switzer Store showing modern design treatment of these projecting units. The copper fronts are finished in verde antique to contrast with the white concrete building walls.





**NIGHT VIEW** showing effectively lighted display windows in the Switzer Store, Los Angeles; John and Donald B. Parkinson, Architects.  
The floor plan of the stores with parking lot located in the rear is shown below

The treatment of these projecting display windows is the key to this successful store design. Standing out from the building, a maximum of attention value is secured by the large areas of glass, and a decorative motif is created.

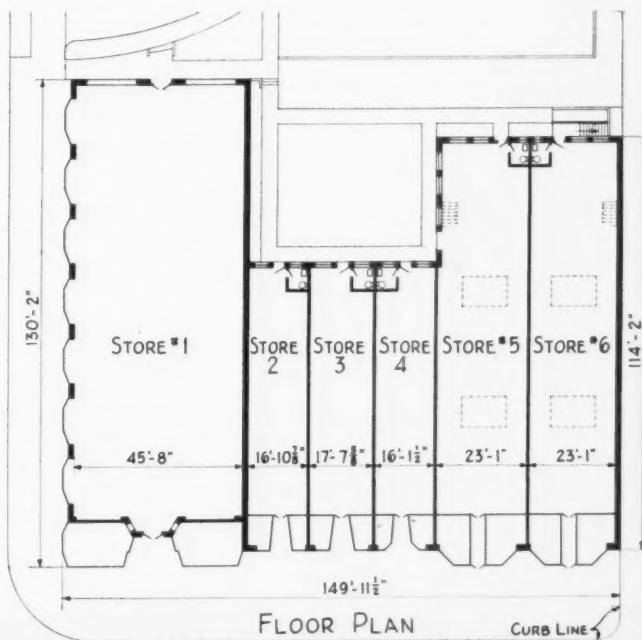
The section, elevation and plan drawings on the opposite page show the construction details for the front window at the entrance of the Switzer Store. The metal work of the windows and fronts is copper finished in verde antique. Decoration is of simple, modern design which harmonizes with the clean cut lines of the building. The decks above the windows have overflows to the conductor pipes for the roof drains. It will be noticed that these front displays extend down to the granite base just a few inches above the sidewalk level.

The night view above shows the effectiveness of these windows as they appear to people passing on the street after dark. Lighting is handled so as to adequately flood the interiors without any distracting glare. Backgrounds are large, plain surfaces with an interesting grained effect; the venetian blinds raise out of sight when not in use. A large etched glass panel over the entrance and the decoration on the doors further carry out the modern design of the store.

The exterior walls of the building are of poured concrete; the forms used on the street fronts were very carefully built to give a good surface. They were then finished by merely applying a coat of cement paint which makes a sharp contrast with the antique copper fronts. Decoration consists of vertical fluting between the windows and horizontal bands above.

The remainder of the building is divided into two

sizes of shops in such a fashion as to give units flexibility enough to meet the various needs of the neighborhood for these types. A parking lot is located in the rear of the building for the convenience of patrons. C. L. Beck was the general contractor who handled the job.



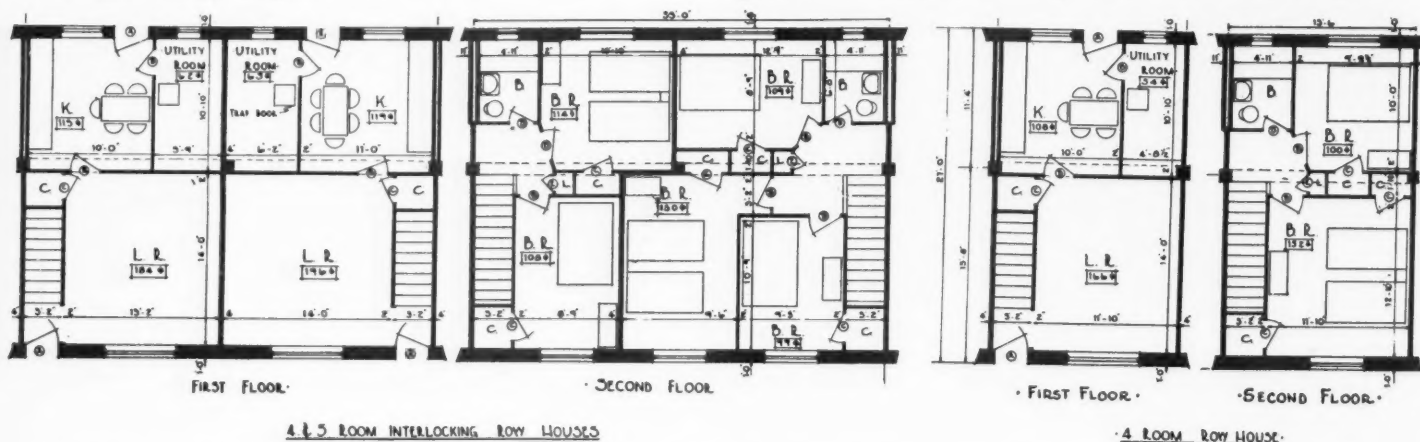
# Efficiency in Row House Planning

## PWA Housing Division Recommends Satisfactory Arrangements for Standard 27 Foot Depths

CONTINUING the review of the model apartment housing plans recommended by the Housing Division of PWA, as presented in the July *American Builder*, we find a number of very interesting new ideas for the efficient arrangement of row houses. The planning experts of the Housing Division, under Horatio B. Hackett, director, have classified and correlated the various forms of apartment dwelling units. Last month attention was directed to the recommendations for 3-, 4- and 5-room units in multiple story buildings. The row house suggestions reproduced herewith from the Department's portfolio present ideas for buildings of 1-, 2- and 3-story heights.

these recommendations show a decided improvement over most of the conventional layouts.

Plan HD-41 illustrates the "interlocking" type of arrangement which is better suited to leasing than to sale for private ownership because there is not a continuous party wall from basement to roof separating the units. A separation is made on the first floor, but on the second floor one unit has two bedrooms while the other has three, the two "interlocking." The suggestion to the right in this plan for 4-room units would be adaptable to private ownership, as the party walls are continuous. In each of these designs, note the abundance of light, good ventilation, accessibility of all rooms and the gen-



PLAN NUMBER HD-41; 4- and 5-room row houses; type of plan, ribbon unit; characteristics: a row house and interlocking row house type plan, bathrooms same throughout, efficient plumbing layout with stacks grouped, utility room on first floor may be used for heating or boiler room or storage space when basement is eliminated. Can be omitted from plan by increasing kitchen area or use as a dinette.

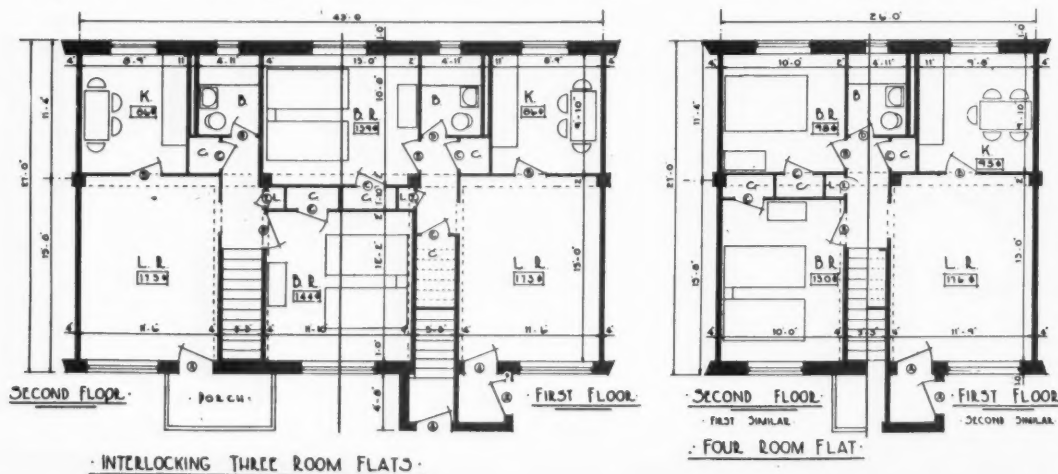
Like the larger building layouts, these row houses have a uniform depth of 27 feet from front to back. This dimension seems to have been adopted by the housing experts as the most satisfactory from all points of view. It makes for well-lighted, well-ventilated interiors with no deep, dark recesses.

In those communities where row housing has been popular, these plans will be studied with particular interest because they represent probably the first consistent analysis of row housing that has been made and because

eral efficiency. On a percentage basis the efficiency of the 4-room units, comparing gross *versus* net area, is 62.8 per cent, and for the 4- and 5-room interlocking units, 62.1 per cent.

Plan HD-42 provides for a 2-story row with interlocking 3-room units illustrated to the left and 4-room semi-interlocking units to the right. The efficiency of the former figures 69 per cent and of the latter 71.1 per cent.

Plan HD-44 provides for an interesting though some-

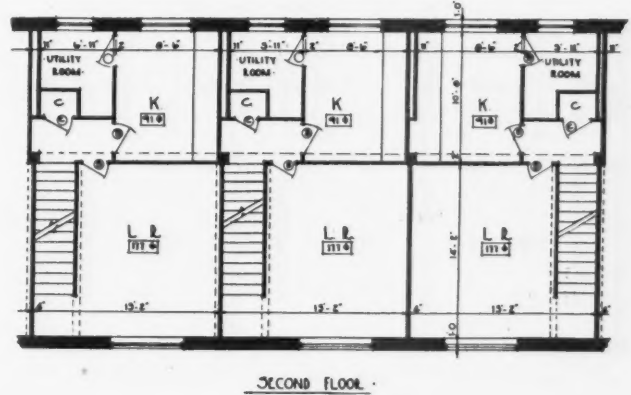
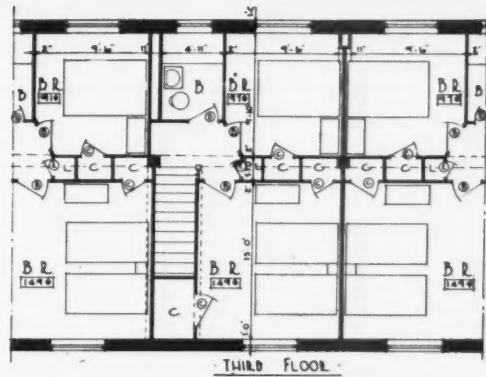
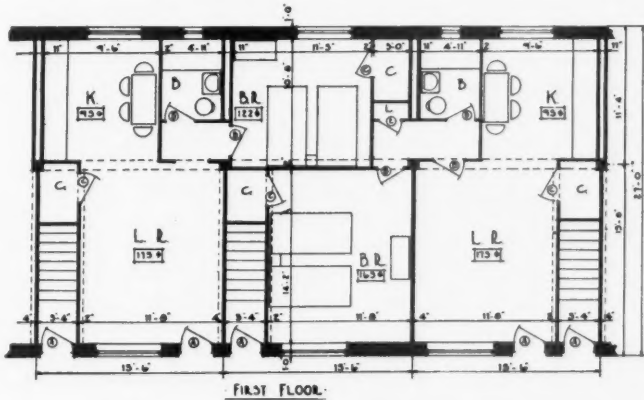


PLAN NUMBER HD-42; 3- and 4-room flats; type of plan: ribbon unit with balconies; characteristics: a flat house of interlocking type, off-center column construction, bathrooms same throughout, used as a ribbon, with basements optional, efficient plumbing layout with stacks grouped.

what novel type of row, three-stories high with 3-room interlocking units on the first floor and 4-room duplex units on the second and third floors. In these upper duplexes living room, kitchen and utility room are on the second floor while two bedrooms and bath are on the third floor, reached by a private stairway which goes up out of the living room.

Plan HD-60 shows recommended arrangements for one-story row houses of 2-, 3-, 4- and 5-room units. Each of these units is illustrated. Rows can be built combining any or all of these in any arrangement desired. The efficiency of these units averages about 75 per cent.

In presenting the portfolio, "Unit Plans," the experts

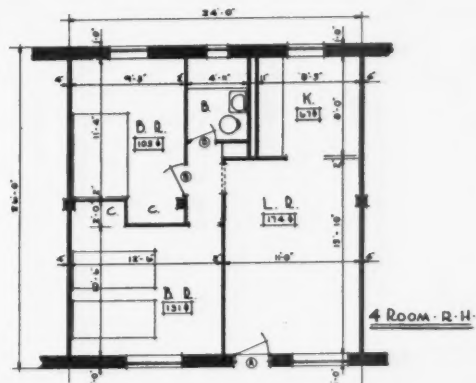


PLAN NUMBER HD-44; 3- and 4-room three-story combination houses; type of plan: ribbon unit; characteristics: a combination flat and row house plan type with 2-story row house superimposed over a 1-story flat, off-center column construction, bathrooms same throughout, used as a ribbon, with basements optional, efficient plumbing layout with stacks grouped, units can be reversed.

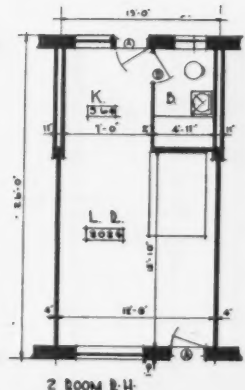
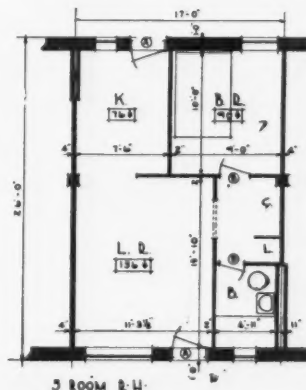
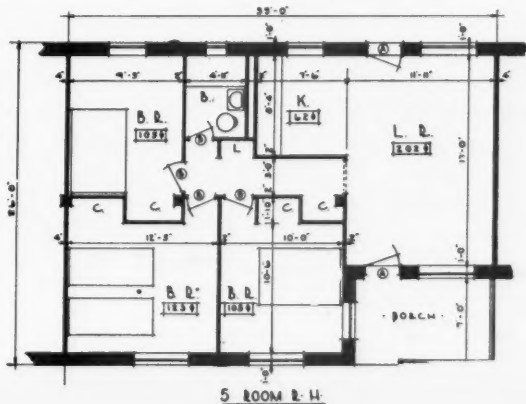
of the Housing Division have included some general advice of interest not only to students of low cost slum-clearance housing but likewise to all architects and builders. Following are excerpts giving items to be avoided in low rent housing:

When considering the site plan, one should avoid: 1, Excessive land coverage—buildings should not occupy over 25 per cent of total land area except in special cases; 2, Traffic streets running through development wherever possible; 3, Placing of buildings on true north and south line thereby limiting possibilities of better exposure and sunlight; 4, Widespread closing of existing streets and opening of new ones in order to accomplish elegant site plan, without regard to cost involved; 5, Locating buildings on site in a closed square or some similar unstudied form, thereby eliminating the advantages to be gained through cross ventilation and a clear view; 6, Obtaining large expanse of playground and lawn or park space through crowded grouping of buildings on other portions of the site; 7, Placing walks and drives for artistic effect rather than for practicability;

8, Giving the matters of orientation and prevailing winds precedence over more important factors; 9, Having style and type of design dictate the selection of dwelling units to be used rather than an intense study of prevailing conditions; and 10, The use of site plans characteristic of level plots on hilly ground, and vice versa.



PLAN NUMBER HD-60; one-story row houses of 2- 3- 4- and 5-rooms; bath-rooms same throughout, used as a ribbon, with basement optional, efficient plumbing layout with stacks grouped.





## How To Build

## A WIND-PROOF Gothic Barn

By A. W. HOLT

I HAVE just returned from examining the first "balloon frame" barn I ever heard of; and, incidentally, it is the first one built near Spicer, Minnesota, where my father was the "lumberman." That was in 1902 and I can almost see dad now as he referred to the old *American Builder*, where he first learned of that construction, while he discussed it with the carpenter who did the building later on. Both agreed that this "trussed-rafter" construction should be much stronger than the old timber-frame that was customary then.

That barn was very similar to the braced-rafter construction illustrated by Fig. 1, which is reproduced from my barn book, "ABC Barn Cost-rates." It is just as plumb and true today as it was 33 years ago. Yet I can recall the farmer-owner telling about another carpenter, who tried to get the job, coming out to see it during its construction and saying, "After the first wind storm you'll be after me to build one of MY barns from the wreckage." The next year that dubious carpenter was building this new "open hay mow" barn himself.

After considering my wind-proof gothic barn some readers will likely say the same about this construction. But I venture the assertion that they will be building them in the near future too. Remember, I do not claim it is tornado proof. I cannot conceive of anything that could withstand a real twister. But its stream-lined, hug-the-ground design, plus its scientific bracing makes it as wind-proof as is practically possible. And high winds wreck more barns than do the funnel-shaped clouds.

After engineers at the University Farm of St. Paul and the Iowa State College of Agriculture of Ames had approved my original ideas of construction and suggested a change of the gable bracing that greatly enhanced its strength at no more cost, the Architectural Department of Northwestern Lumbermen's Association of Minneapolis prepared plans for this barn for the four widths of 32, 34, 36 and 38 feet. Construction details for the 36 foot width are reproduced on the opposite

page. Refer to these plans as you read on.

Of first importance, the height from grade to ridge of a gothic barn should never exceed the width of the barn; and the rafters should ALWAYS start at the joists. After examining dozens of "sway-backed" gothics and consulting many dealers and carpenters who have been most successful in building gothic barns, I would say most emphatically that the wall framing should not extend above the joists. Bracing the walls to the joist is not effective when there is no hay load to hold the joists down. If the walls spread the roof is sure to sag. If greater hay capacity is desired, the rafters can extend straight for two or three feet by raising the axis above the top of the joists. However, it will cost but very little more to build the barn wider.

Fig. 2 explains why a gothic barn resists wind from the side better than the gambrel roof. To have equal hay capacity, the walls of a gambrel barn must be about 15 percent of its width higher than for a gothic design, as represented by X of Fig. 2. This means almost 6 feet on a 36 foot barn.

Opinion varies as to the proper radius for gothic roofs. At one time I favored the two-thirds-of-width basis but after seeing one built at a radius equal to three-quarters or 75 percent of the width I changed for two reasons: The rafters are straighter so less is sawed off, thereby making them considerable stronger at no extra cost; the ridge is about 10 percent higher for  $\frac{3}{4}$  radius than for  $\frac{2}{3}$  radius, thereby lowering the walls without losing hay capacity to speak of. Furthermore, the design was more pleasing to me and most others I consulted. Accordingly, these plans show radius equal to 75 percent of the width of the barn with axis on top of the joist.

As to the cornice, many will prefer a wider roof projection with open cornice or exposed rafters. My preference for the cornice as detailed is based on economy and efficiency. Open cornice greatly increases the cost of painting and harbors bird nests, especially swallows. It is much cheaper to use a 12 inch board for a plancher than to have the siding or barn boards extend to the

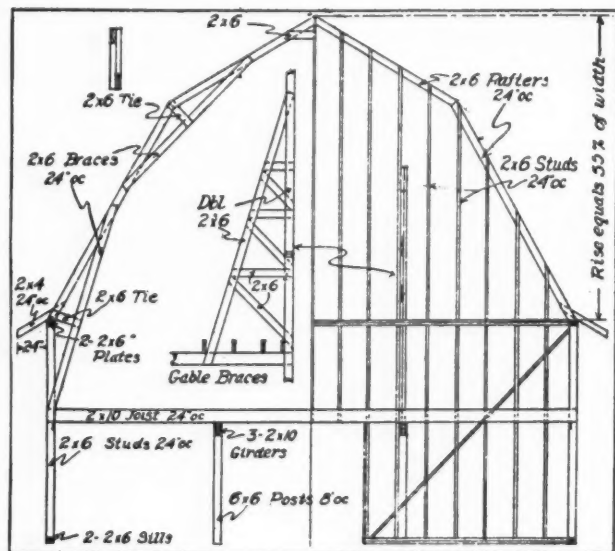


Figure 1

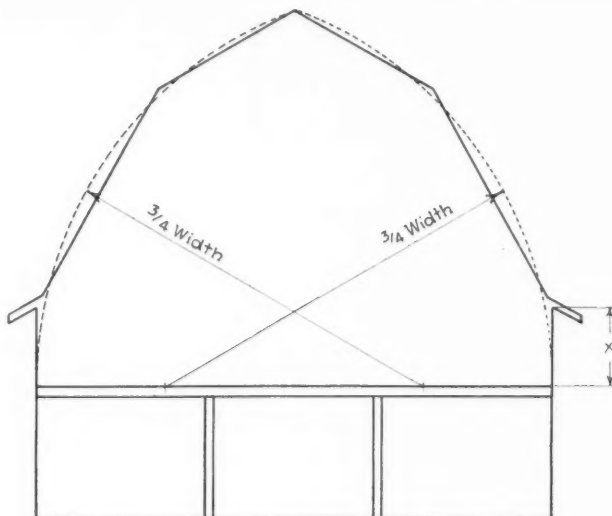
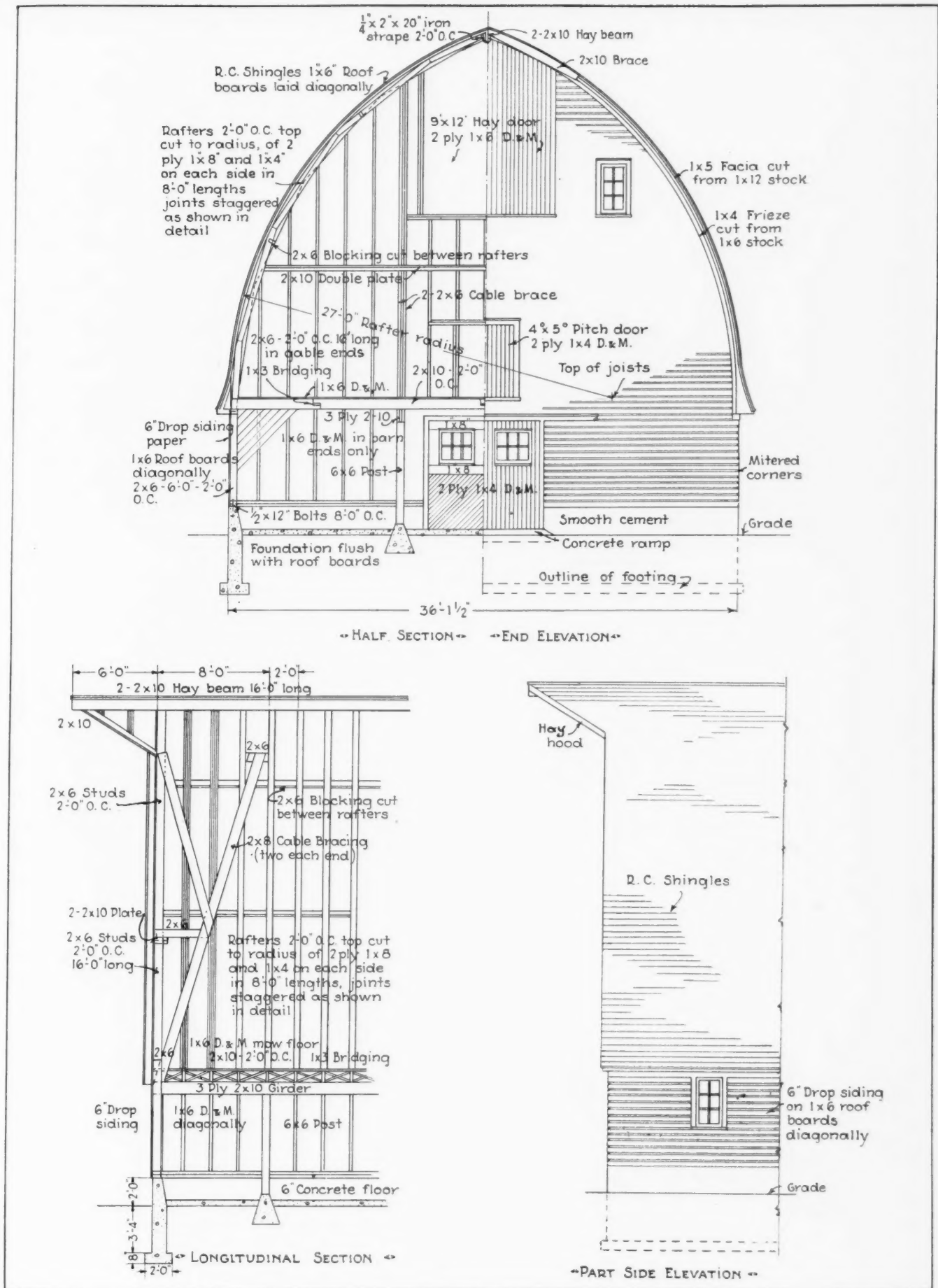
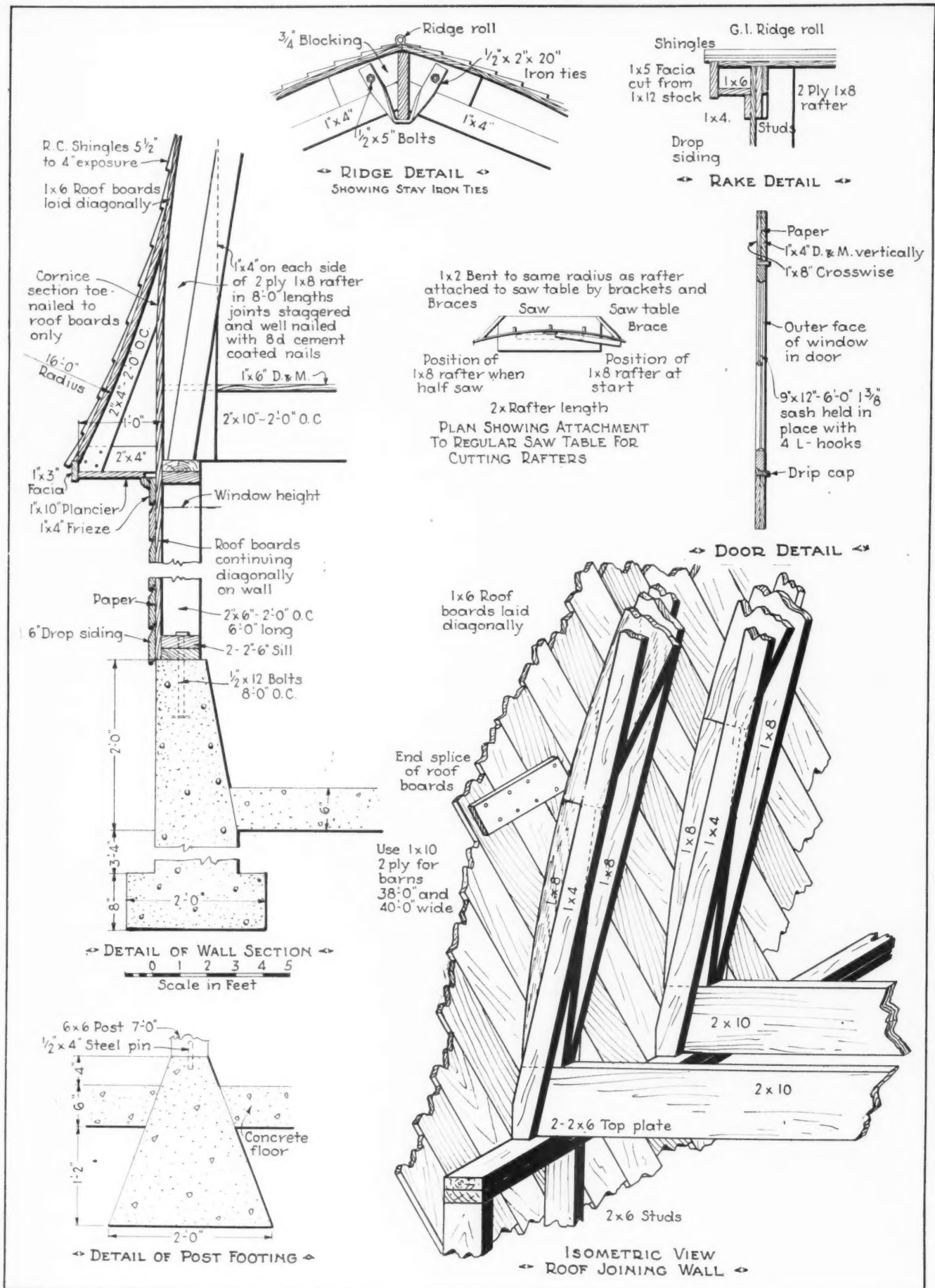


Figure 2



Construction Details of A. W. Holt's Wind-Proof Gothic Roof Barn



Construction Details of A. W. Holt's Wind-Proof Gothic Roof Barn



junction of the roof and wall lines. Wider cornice must be constructed to resist greater wind pressure. The only objection I see to this closed cornice is the fact that it makes a convenient runway for rats and mice. This can be easily cured by scattering poisoned grain in them or turning a couple cats in this "varmin cage" occasionally.

The main feature of this wind-proof gothic barn is the diagonal sheathing, continuous from the sills (which are securely bolted to the foundation) over the roof to the ridge. The cornice framing is nailed on over the sheathing. If desired this can be built in sections on the ground and hoisted up into place. By omitting about half of the roof boards it can be securely nailed through the roof sheathing into the rafters.

This diagonal sheathing ties the roof to the wall and eliminates the weak point of toe-nailing the rafters to the floor or saving the cost of tying rafters to joists. But the main advantage of this diagonal sheathing is:—*Every piece of roof sheathing is a semi-rafter and CHEAPER to apply than horizontal sheathing.*

That "cheaper" claim is the one that practically everyone questions; so I will explain this, first by reference to Fig. 3 which is self-explanatory from the nailing standpoint. As to splicing, the isometric view shown by the plans shows that any length boards can be easily spliced between the rafters by securing the floating ends to a scrap piece of lumber and nailing it to the adjoining pieces of sheathing. This can be done as quickly as a piece of horizontal sheathing can be sawed to center on a rafter, which is necessary unless end-trimmed material is used.

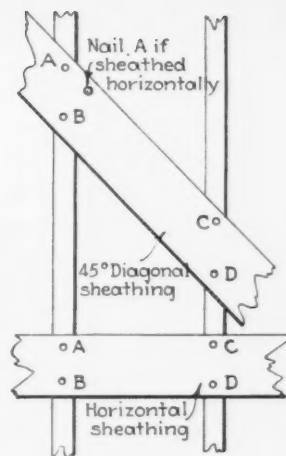
If desired, end-matched material can be used for the wall below the joist, for greater insulating value, with joints staggered from the floor line to about 8 feet above to securely tie the roof to the walls. Also, roof sheathing above can be spaced if desired by using narrower material. And a piece of roof sheathing can be omitted every three or four feet to provide a place to stand in while applying the sheathing above it and as a ladder for ascending and descending on the roof, as is the usual practice with horizontal sheathing. It's not much harder to work diagonally on a roof than horizontally if three or four men apply the sheathing. The only tool needed to apply this sheathing is a hammer, except at the ridge and ends of the roof. Anyone can apply it CHEAPER than horizontal sheathing.

Every piece of horizontal sheathing imposes more weight on the rafters, whereas, every piece of diagonal sheathing not only sustains its own weight but helps to support the rafters. The Forest Products Laboratory at Madison, Wisconsin, has proved by test that diagonal sheathing will resist four times as much SIDE pressure as horizontal sheathing. Until such time as they can make a comparative test of sections of barn roofs, all I can say is that this diagonal sheathing greatly strengthens the roof framing and braces the whole barn against end pressure. That should be quite obvious to everyone.

Regardless of the roof framing used, diagonal sheathing will enhance its strength. Many barn builders prefer sawed rafters of 3 pieces of 1x8. This requires the same amount of material as the rafters shown by the plan. The weak point of any built-up rafter is the joint. If 3 pieces of 1x8 are used, there will be at least two pieces equal to 16 sq. in. at each joint, which is the same as shown by the plans if no two joints are opposite. Therefore, break all joints when building gothic rafters.

Laminated rafters, such as 6 pieces 1x3, 5 pieces 1x4 or any other size materials bent to the desired radius and nailed or bolted together to retain the bow, ARE NOT RECOMMENDED by the Iowa State College of Agriculture. This confirms my investigation of many

Fig 3. Proof that diagonal sheathing requires 30% less nails than horizontal sheathing. Note that nails AB and CD are spaced farther apart on the rafter, or, that nails AC or BD are farther apart on the board if sheathed diagonally than would be required for horizontal sheathing.



sway-backed gothic barns. Unless these laminated rafters are glued or extra well bolted, the pieces will slip and the roof will fail. Avoid laminated rafters that depend on nails to prevent slippage and straightening out.

The truss-girt-rib gothic framing has proved very efficient. The first gothic I built was from plans shown in the *American Builder* in 1915. It was a barn 44'x80' with rafters starting at the mow floor, constructed as follows: Master rafters of three pieces of 2x10, securely bolted, were spaced 8' 0" oc; girts were 2x6 between these master rafters over which double 1x4 ribs were bent every two feet. That barn is still standing true and plumb after 20 years on the Montana prairies where it IS windy. But, regardless of the framing use diagonal sheathing.

Although the plans show dropsiding over the diagonal sheathing with paper between, at the sides boards and battens or bevel siding can be used equally well. This is largely a matter of personal choice. The extra cost of the double sheathing below the floor of a barn 36'x50' is only a matter of \$50.00 using \$40.00 material plus about 20 hours of labor. Most of this extra cost should be saved by 30 percent reduction in nails and nailing of roof sheathing so the extra bracing and greater insulating value of double sheathing cannot cost enough more to be of any consequence to a farmer who wants a barn that will stand.

Note that this diagonal sheathing is applied inside of the studs in the ends, so the outside sheathing need not be furred out above the floor line. Of main importance, however, do not place windows in the ends of this diagonally sheathed wall because doing so will reduce its strength about 40 percent according to tests of wall panels conducted by Forest Products Laboratory and given by bulletin, "Stronger Frame Walls" issued by National Lumber Manufacturers Association and available to any lumber dealer. Ask your lumber dealer to get that bulletin if he does not have it on file.

Special attention is called to the gable braces. These are "up-side-down" to what I had been advocating (see Fig. 1) and which most carpenters seemed to prefer, until engineers at several agricultural colleges pointed out the merits of this brace, as follows:

1. Hay pressure cannot break this brace.
2. A sagging girder cannot pull the gables in.
3. Wind pressure on the leeward side cannot pull the girders up when the hay loft is empty.
4. This brace braces the barn longitudinally.

Therefore, if you have been bracing gables from the gable to the girder, as shown in Fig. 1, turn them up-side-down and have a brace that is scientifically correct.

The plans show a double 2x10 plate across the gables.

(Continued to page 71)

# E. M. Lurie Perfects New Steel House

## Uses Metal Lath and Cement Plaster on Light Structural Frame to Win Low Cost

THE fireproof house has been "just around the corner," for a good many years. Those familiar with steel, concrete and other fireproof materials generally, know that such a building is practical. Essentially, fireproof construction is not expensive; but, for a variety of reasons, no one had developed it to the point where it was as economical for a small cottage as for the sky scraper and other large buildings. It was not within the range of the wage-earner's pocketbook.

But now Mr. E. M. Lurie, well known construction engineer, and the secretary of the Metal Lath Manufacturers Association, announces his development of a new type of fireproof construction especially adapted to home building that is within the price range of ordinary wood frame. More than that, this new construction is applicable to any size and type of building.

Mr. Lurie demonstrated the fact that this construction is within the means of all home buyers in the most conclusive way possible. He designed a typical small house, the attractive home shown in the accompanying illustration. He then took a number of bids from well-known building contractors. Some were based on ordinary frame construction and some on this new fireproof construction—both types to be completed with latest plumbing, heating and electrical equipment.

The lowest bid on ordinary frame construction was slightly over \$4,000.00. Several bids on the fireproof construction using the Lurie Wall were around \$3,750.00, showing a saving of over 6 percent in its favor.

The reason why this construction is economical is evident. Mr. Lurie has avoided untried materials and doubtful construction practices, and all specially designed features that require unusual and costly engineering lay-

out. New-fangled materials and methods may seem good in the laboratories and may seem practical in theory, but too often when the actual work is undertaken, it is discovered that the journeymen and the contractors are not familiar with the materials, or they are used in ways they are not familiar with.

Mr. Lurie did not choose to experiment at the expense of the home owner. Long familiar with others' disastrous experiments, he evolved the Lurie Wall using only standard well-known materials, and these materials most ingeniously and economically. The light steel bearing members are carried as standard stock in any steel warehouse, and the metal lath and light channel irons are part of the stock of every building materials dealer. Sand and cement and interior plastering materials are available everywhere. All of this assures maximum low cost for building materials in all parts of the country.

The bearing columns (of which very few are required as the recommended spacing is 12 feet on centers) and the wall bearing members, where required, are standard light steel angles. These columns are wrapped outside and in with light channel irons and metal lath. The exterior is then covered with concrete, and the back of this outside lath is gunited or plastered with concrete to bury the channels and lath and preserve them. This forms an envelope of dense 2 to 3½ inch re-inforced concrete.

The space between the outside and the inner wall finish which is plaster on metal lath is available for heat or air ducts, plumbing and wiring. It is also useable for air conditioning. The unique design which insulates the inner wall finish from the exterior produces a vacuum bottle effect—a house warm in winter, cool in summer. Although the continuous air space provides a consider-

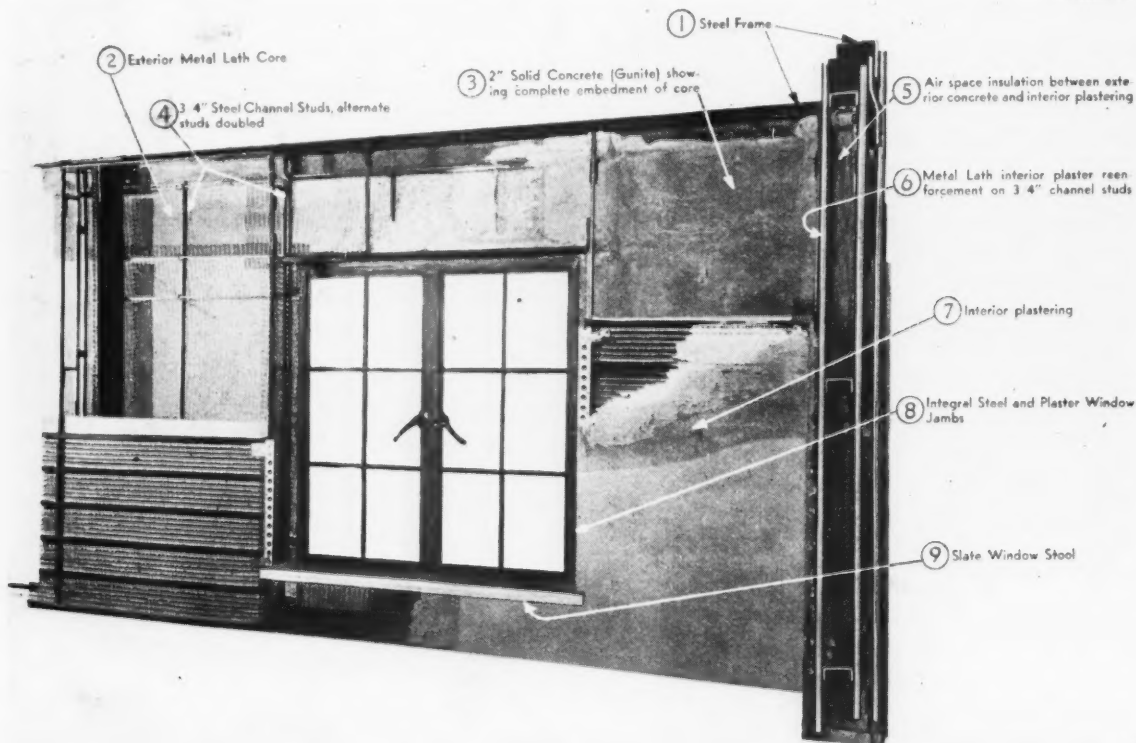
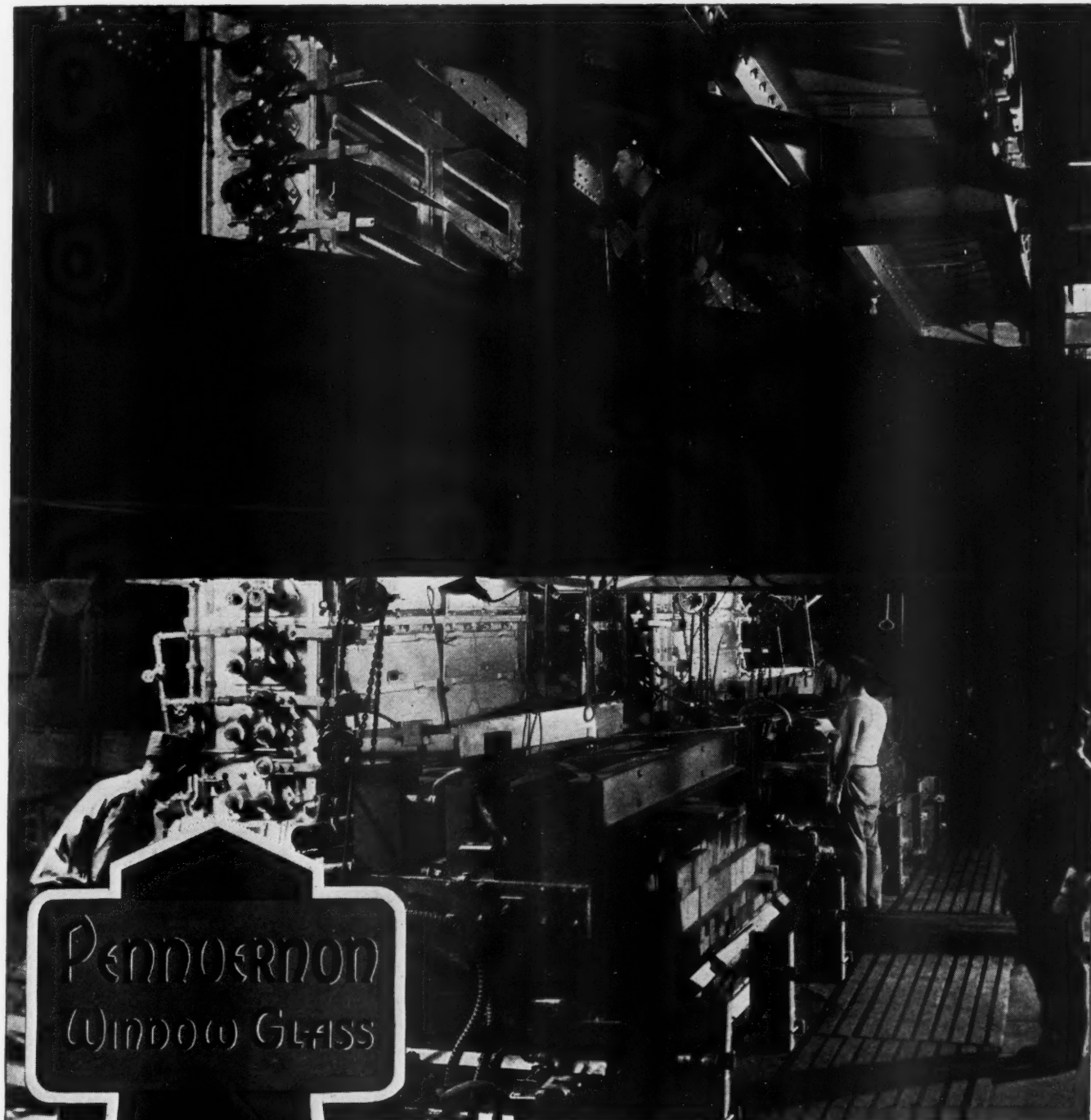


Photo of Demonstration Wall showing steel frame, plastering channels and metal lath.

# Use "PennvernON"...not just "window glass"



PennvernON  
Window Glass



Photograph by Johnston & Johnston

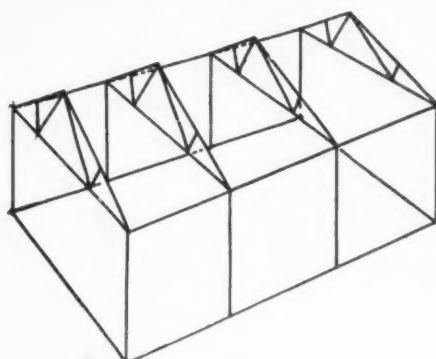
**UP FROM THE DEPTHS** of the melting tank below, this specially-designed PennvernON drawing machine draws the molten glass, forms it into the brilliant, clear sheets which have made the name "PennvernON" synonymous with high quality. Skilful PennvernON Craftsmen tend the machine carefully and faithfully, day and night.

Our new booklet, called "The Making of a Leader", describes in dramatic pictures the manufacture of PennvernON Window Glass. To get your free copy of this interesting book, sign and mail this coupon to

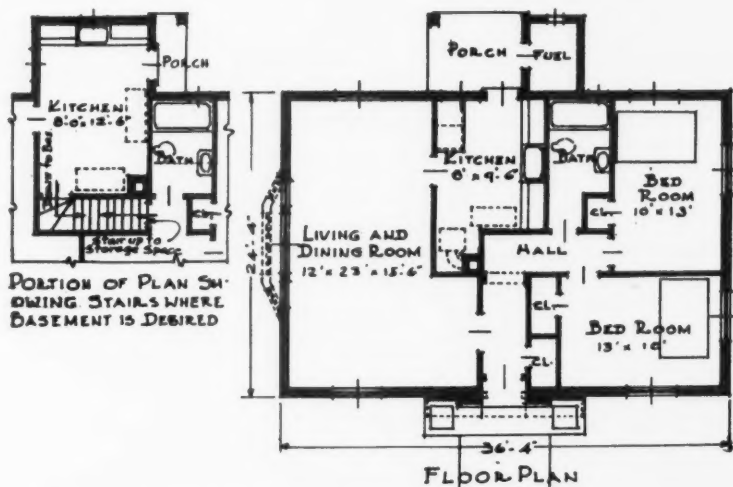
**PITTSBURGH  
PLATE GLASS COMPANY**  
2135 Grant Building, Pittsburgh, Pa.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_





PERSPECTIVE OF STEEL FRAME



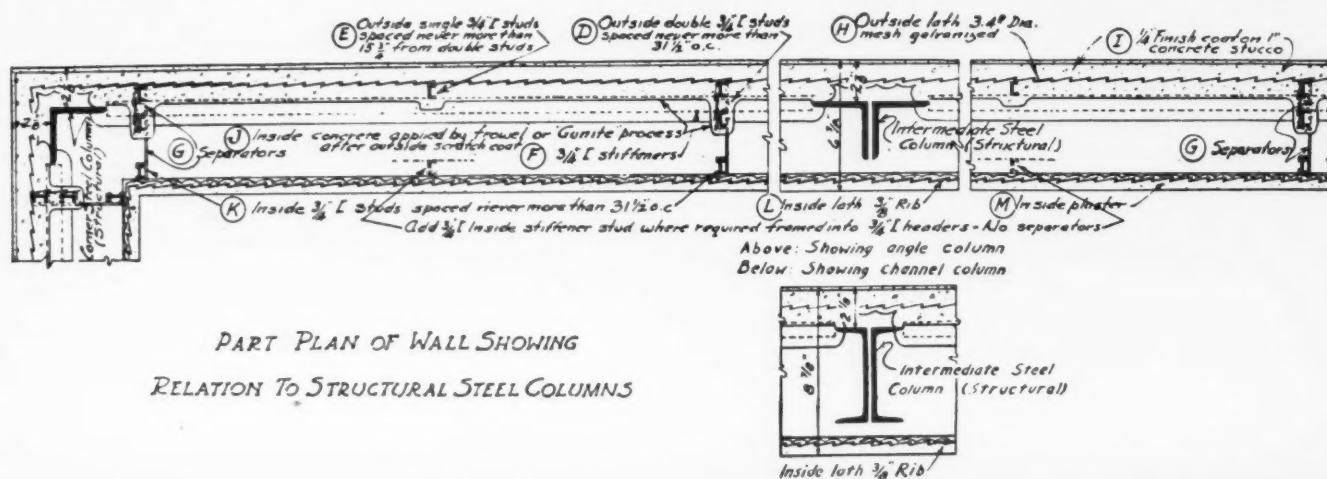
able degree of insulation, more insulation may be installed by use of standard board or quilt or fill insulation.

Floors are either steel joists or concrete slabs. Wood joists may be used for floors above the basement and where the basement is finished, wood joists can likewise be used for the first floor. The under side of all ceilings are plastered on metal lath.

The wall to wall bearing, particularly in smaller buildings, permits the use of the well known 2 inch solid

plaster partitions of metal lath and channel irons. These save floor space, are tough and durable, and are unusually sound resistant. This type of partition also lends itself to form and depth in architectural effects, as the balance of the construction does.

The roof is of light steel trusses, covered with concrete slabs poured in place and finished with composition, slate or asbestos shingles or tar and gravel, etc. For flat roofs in the modern style a deck-type finish is used.



PART PLAN OF WALL SHOWING  
RELATION TO STRUCTURAL STEEL COLUMNS


 INTERNATIONAL

## From the Long Road to the Job

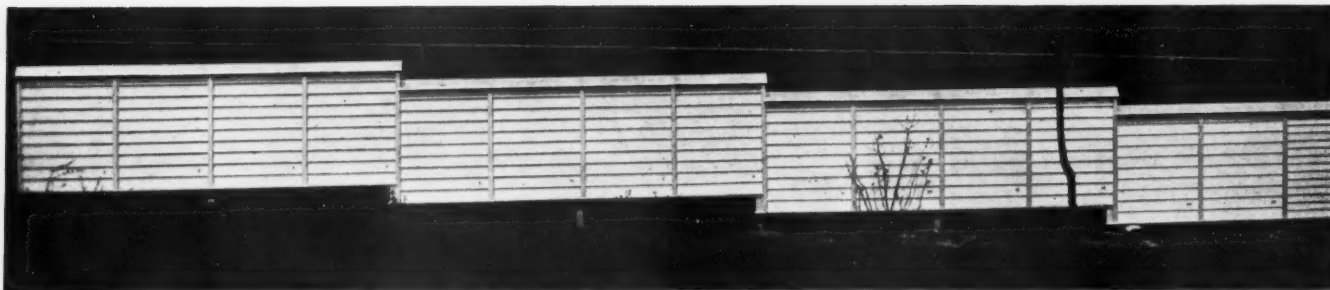
● In a spectacular driveaway, 44 International Trucks were recently driven from the factory at Fort Wayne, Ind., to Graham Brothers, Inc., producers and distributors of building materials at Los Angeles. Most of these trucks are powerful units for six-wheel and other heavy-duty service. In this striking photograph two of the trucks are seen on the job. . . ● In the same profitable manner International Trucks are serving the public everywhere with their stamina and their *lasting economy*. Let an International branch or dealer *demonstrate* these trucks to you. Sizes from ½-ton light delivery to heavy-duty dump and tractor trucks. International chassis prices, \$400 up, f. o. b. factory.

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606 S. Michigan Ave.      OF AMERICA      Chicago, Ill.  
(INCORPORATED)



# INTERNATIONAL TRUCKS





# Tests Endorse Aluminum Priming

## A Study of Priming Paints on Different Species of Lumber

By ROBERT I. WRAY and JUNIUS D. EDWARDS

of The Aluminum Research Laboratories

**A** NUMBER of articles have appeared in the *American Builder* evaluating the merits of various paint systems in the protection of lumber. Among these have been several describing the value of aluminum paint as a priming coat, applied to house siding, both mechanically at the mill and by the painter on the job.

Aluminum paint has proved commercially successful as a wood priming paint, as evidenced by its present-day widespread use. Few of these applications, however, have been made under conditions which would permit an accurate comparison of the performance of aluminum paint and other common systems of painting.

A test fence was constructed in such a manner as to simulate actual building practices in the walls of a house. The fence measured 112 ft. in length by 6 ft. high. Two-by-four studding was spaced on 2-ft. centers and covered both front and back with wood sheathing. It was closed at the top with a small sloping roof with slightly projecting eaves; a water table was placed at the bottom. The fence faced almost due south, a condition which permits maximum exposure to sunshine.

Actual house siding was applied to the fence in the usual manner. The exposure area was divided into 28 sections, each four feet wide and five feet high. The kinds of lumber selected for these paint tests were red cedar (edge and flat grain), redwood (edge and flat grain), white pine, cypress, yellow poplar, Douglass fir, West Coast hemlock, Englemann spruce, Western yellow pine, and Southern yellow pine (both short-leaf and long). These represent practically every species of wood used commercially for siding purposes. The red cedar, redwood, white pine, cypress and poplar were in the form of bevel siding, while the remaining woods were used in the form of pattern 106 drop siding.

Since an important purpose of the test was to compare the behavior of aluminum paint as a priming coat with a white paint commonly employed for this purpose, the test sections were arranged in such a manner that each kind of wood was assigned two sections, one primed with aluminum paint, the other with white.

Because mill priming of lumber with aluminum paint presents certain technical advantages, it was decided to apply the aluminum priming coat in this manner. Therefore, half of each lot of lumber was spray-coated mechanically by a mill priming machine, in which the alumi-

num paint was applied to both face and back of the lumber by means of automatic spray-guns. The aluminum priming coat was allowed to dry. The siding was then nailed to the wood sheathing, using aluminum-primed and bare siding on successive sections. House painters then proceeded to apply a white priming coat, properly reduced, to the bare sections. Finally, two finishing coats of the same white paint (thinned according to directions) were applied over the entire fence.

The aluminum priming paint was made with a long oil varnish mixed with 1½ lb. of aluminum bronze powder per gal. of vehicle. The white paint was formulated with white lead, zinc oxide and inert, using linseed oil, turpentine and dryer as the vehicle, all according to a standard formula. Several sections of the edge-grain red cedar were included so that three different types of aluminum paint vehicles could be tested on the same wood. These vehicles were long oil varnish, glycerol phthalate resin varnish, and long oil phenolic resin varnish. These primers were painted over with two coats of white when the rest of the fence was painted.

During the first season's exposure, very little change occurred on any of the sections aside from loss of gloss and some chalking. There was slight peeling of paint over the white primer on the sharp top edges of part of the drop siding. Slight failure of paint over the white primer was evident on the spruce and hemlock.

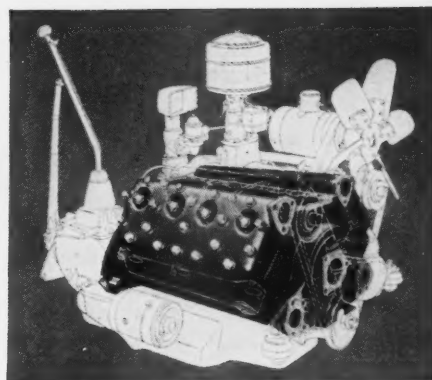
After two years' exposure, considerably more failure was noted on many of the sections which had been primed with white paint. Peeling and flaking of the paint from the summer wood bands was now quite pronounced on the spruce and hemlock. Some paint flaking had also taken place on the Douglass fir, Western and Southern yellow pine, white pine, and flat-grain redwood sections. Other sections primed with white paint and all sections primed with aluminum paint were still in good condition. There was evidence of shrinkage of some of the drop siding primed with white paint, as the paint bond between the boards was broken, exposing bare wood. No shrinkage was observed on the corresponding sections primed face and back with aluminum paint.

At the end of the third year, all white-primed sections, except the edge-grain redwood and cypress, had shown paint flaking and even on the latter woods there was slight paint failure on the bottom boards. The flaking was most pronounced on the lumber on which the paint had shown early failure. The flaking on the red cedar was very fine as to size of flake. Paint on a few of the sec-

Figure 1, (above) View of Test Fence Showing Arrangement of Sections.



# Here's One Reason Why BUILDING CONTRACTORS Are Changing to Fords



THE Ford V-8 engine is distinctly a quality product. It is designed and built to give reliable, economical service throughout its unusually long life.

But even this great engine will need overhauling **SOME** day. And when that day arrives . . . **YOU** won't have to foot a big repair bill or do without your truck for more

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Thus . . . from the very day you buy a Ford V-8 Truck or Commercial Car, you are sure of low maintenance costs.

Ford alone . . . among the manufacturers of low-priced trucks . . . offers you this modern, economical low-cost engine exchange plan and the privilege of exchanging many other assemblies.

## MAKE YOUR OWN TEST OF V-8 PERFORMANCE AND V-8 ECONOMY RIGHT ON YOUR OWN JOB

These Ford exchange privileges are important, of course . . . from the view-point of low maintenance costs. But even more important are those features of Ford V-8 Trucks and Commercial Cars that make

V-8 Performance and V-8 Economy the standards of the commercial field.

See for yourself what these features mean to you . . . how much time and money they save you . . . by making

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# FORD V-8 TRUCKS AND COMMERCIAL CARS

tions primed with aluminum paint, such as hemlock and yellow pine, was beginning to show slight failure. The other aluminum-primed sections were still good.

A final inspection of the fence was made after four years' exposure. Practically all sections which had been primed with white paint were in need of repainting. The white-primed, edge-grain red cedar showed moderate paint flaking to the wood, with slight wood checking. Similar results were secured on the flat-grain red cedar. The corresponding aluminum-primed sections showed no paint failure and the wood was sound. The red cedar sections having the special aluminum primers made with synthetic resin vehicles were in excellent condition and showed only slight top coat checking because of the hard-drying characteristics of these primers. There was very slight paint flaking on the white-primed edge-grain redwood section, particularly on the bottom board, whereas there was no failure on the aluminum-primed section. On the flat-grain redwood primed with white paint, the grain was badly raised on a number of boards, which caused very bad flaking of paint to the wood on these areas. The aluminum-primed section showed no paint flaking, although the grain was raised on one or two boards.

White pine primed with white paint showed typical paint flaking from the summer wood bands after four years' exposure. This section is shown at the right in Fig. 2. There was also considerable fine wood checking on this section. The paint on the aluminum-primed section, shown at the left, was sound, although some of the boards showed fine cracking. This lumber was considerably warped as received, which may account for some of the cracking which occurred.

The paint on the cypress sections was in excellent condition, confirming the results concerning the painting characteristics of cypress reported by F. L. Browne of the Forest Products Laboratory. The only evidence of failure was some very slight paint flaking on the bottom board of the white-primed section. The cypress sections were in the best condition of any section on the fence. There was considerable paint failure on the white-primed poplar section, with numerous fine wood checks, whereas the paint on the aluminum-primed poplar was still sound.

The most pronounced failure occurred on the white-primed sections of spruce and hemlock. On the hemlock, the grain was badly raised on a number of boards and there was heavy paint scaling. The grain was also badly raised on one board of the aluminum-primed hemlock, but there was very little paint flaking. The white-primed Douglass fir exhibited considerable paint flaking from the summer wood bands, while the corresponding aluminum-primed section was in sound condition. The paint

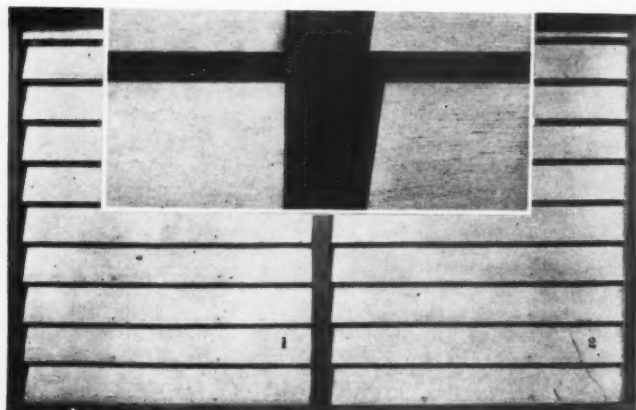


Figure 2, Sections of Edge-grain Red Cedar after 4 years' Exposure; Aluminum-primed lumber on left, white-primed lumber on right; Close-up insert shows condition of the two surfaces.

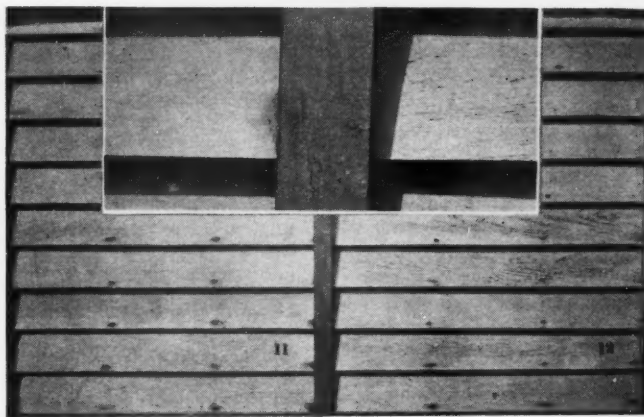


Figure 4, Sections of White Pine after 4 years' Exposure; Aluminum-primed on left, white-primed lumber on right; Close-up insert shows condition of the two surfaces.

failure on both the Western yellow pine and Southern yellow pine which had been primed with white paint was the typical type of paint flaking from the hard, horny bands of summer wood. Some slight failure of the paint coating on the corresponding aluminum-primed sections was noted. The Southern yellow pine sections are shown in Fig. 3.

The results of four years of exposure check very closely with the data secured by other investigators employing the smaller panels. The test fence contributed additional information concerning the painting characteristics of the various species of lumber involved. This also was a confirmation of earlier work on this problem.

One of the most important conclusions reached is that while aluminum priming coats on certain species of lumber, such as red cedar, redwood and cypress, show superior performance in comparison with other painting systems, the use of aluminum paint is specifically indicated for priming spruce, hemlock, Douglass fir and yellow pine.

The advantages of applying the aluminum priming coat at the mill were emphasized by such facts as the absence of shrinkage of the back-primed lumber and by the uniformly good performance of the aluminum paint on all the species of wood.

At the end of the four-year period, the test fence was repainted. It is worthy of note that the aluminum-primed sections presented in every case a much better surface for repainting than the corresponding sections primed by other methods. This, of course, is a cumulative advantage with each repainting.

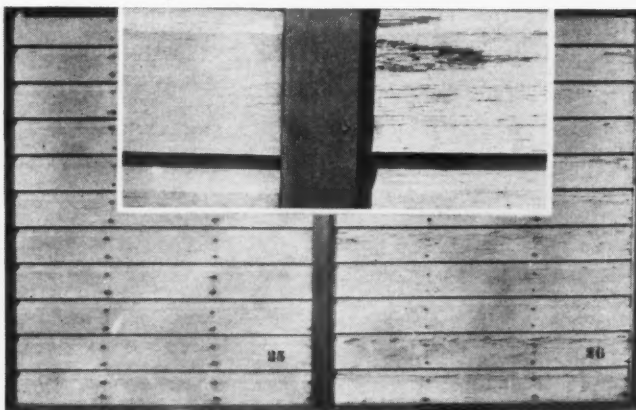


Figure 3, Sections of Southern Yellow Pine Siding after 4 years' Exposure; Aluminum-primed lumber on left, white-primed lumber on right; Close-up insert shows typical type of paint scaling.





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These home builders bought the Gar Wood Tempered Aire automatic oil furnace and air conditioning system because they know they can depend 100% on the Gar Wood installation to provide health, comfort and convenience the year round . . . at low cost. Write us today for free descriptive literature.

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# Relative Cost of Material and Labor in PWA Building Construction

By HERMAN B. BYER

Of the Bureau of Labor Statistics, United States Department of Labor

OF EACH dollar expended for P. W. A. building construction, labor on the job receives approximately 27 cents. Materials account for 56 cents of each dollar spent. The remaining 17 cents is used for overhead, miscellaneous expenses, and profit. The overhead and miscellaneous expenses include such items as office work, rent, insurance, workmen's compensation, depreciation of equipment, etc. These data were compiled from reports submitted to the Bureau of Labor Statistics by 257 primary contractors and subcontractors working on 54 small- and medium-size buildings, with a combined cost of \$1,875,178. The sample covers buildings in all geographic divisions.

Among the types of buildings covered were schools, public office buildings, courthouses, almshouses, hospitals, armories, dormitories, army barracks, officers' quarters, and Coast Guard stations. Of the 54 buildings, 24 were erected by the Federal Government and 30 by the various State governments or political subdivisions receiving allotments from non-Federal P. W. A. funds.

The Federal buildings ranged in cost from a \$13,000 Coast Guard station in Massachusetts to a \$188,000 hospital in Maine. The highest priced non-Federal building was a college dormitory in Arkansas, costing \$123,000; the lowest, a school building in South Carolina, costing \$7,300.

These construction jobs provided nearly 653,000 man-hours of labor at the site of building operations. The men received over \$500,000 for their work, which represents an average hourly rate of 77.4 cents.

Fabrication of material in the final step before use provided over 697,000 man-hours of labor. This accounts only for the labor used in the final stage of fabrication. For example, only labor in manufacturing bricks was considered, and the labor involved in taking clay from the pits or in transporting the clay and other materials used in the brick plant was omitted. In fabricating structural steel, the computations covered only the labor in the rolling mill, and no account was taken of the labor created in mining and smelting the ore or labor in the blast furnaces, the open-hearth furnaces, or the blooming mills.

TABLE 1.—Where the Building Construction Dollar Goes

Item	Amount	Percent
Contract price.....	\$1,875,178	100.0
Pay rolls on the job.....	\$ 505,134	26.9
Cost of materials on the job.....	1,055,130	56.3
Overhead and miscellaneous.....	314,914	16.8

There was considerable difference in the percentage of the building dollar paid to labor on the different jobs. In constructing a machine shop in California costing \$90,000, labor at the site received only 12 cents from each dollar spent. On the other hand, on a school building in Kentucky, costing \$9,000, labor received 49 cents of each dollar spent.

Material ratios also varied greatly—on an Army guardhouse in Massachusetts, costing \$29,000, only 38 cents of each dollar was spent for material, while on a municipal firehouse in Tennessee, costing \$9,000, 84 cents of each dollar was spent for material.

TABLE 2.—Value of Material Used in Erecting 54 Buildings Financed from P. W. A. Funds, by Type of Material

Type of Material	Value of material orders placed	
	Value	Percent
All materials.....	\$1,055,130	100.00
Aluminum manufactures.....	2,013	.19
Brick, hollow tile, and other clay products.....	116,179	11.01
Cast-iron pipe and fittings.....	7,973	.76
Cement.....	77,545	7.35
Coal.....	1,221	.12
Concrete products.....	30,932	2.93
Copper products.....	8,517	.81
Crushed stone.....	3,016	.29
Doors, shutters, and window sash and frames, molding and trim (metal).....	16,790	1.59
Electric wiring and fixtures.....	38,813	3.68
Electrical machinery, apparatus, and supplies.....	874	.08
Elevators and elevator equipment.....	550	.05
Explosives.....	795	.07
Foundry and machine-shop products, not elsewhere classified.....	13,198	1.25
Furniture.....	27,718	2.63
Glass.....	5,937	.56
Hardware, miscellaneous.....	25,921	2.46
Heating and ventilating equipment.....	70,311	6.66
Linoleum.....	2,698	.26
Lumber and timber products, not elsewhere classified.....	116,853	11.08
Marble, granite, slate, and other stone products.....	35,407	3.36
Nails and spikes.....	2,048	.19
Nonferrous-metal alloys and products, not elsewhere classified.....	1,027	.10
Paints and varnishes.....	14,654	1.39
Paving materials and mixtures, not elsewhere classified.....	962	.09
Petroleum products.....	2,787	.26
Planing-mill products.....	66,200	6.27
Plumbing supplies, not elsewhere classified.....	71,495	6.78
Pumps and Pumping equipment.....	3,817	.36
Roofing materials, not elsewhere classified.....	29,726	2.82
Sand and gravel.....	40,133	3.80
Sheet-metal work.....	12,778	1.21
Steam and other packing, pipe and boiler covering, and gaskets.....	1,725	.16
Steel-welds and rolling-mill products, not elsewhere classified.....	26,511	2.51
Structural and reinforcing steel, and ornamental metal work.....	123,269	11.68
Stoves and ranges, other than electric.....	492	.05
Tiling, floor and wall, and terrazzo.....	14,682	1.39
Wall plaster, wall board, insulating board, and floor composition.....	19,736	1.87
Window and door screens and weatherstrip.....	108	.01
Window shades and fixtures.....	213	.02
Wire products, not elsewhere classified.....	4,671	.44
Other.....	14,835	1.41

Of the \$1,875,178 spent on these structures, over \$1,055,000 was spent for materials. Orders placed for these materials benefited firms in more than 50 industries located in all sections of the United States.

More money was expended for structural and reinforcing steel than for any other class of material. Other materials accounting for an expenditure of over \$100,000 were brick and hollow tile, and lumber and timber products. Orders placed for cement, heating and ventilating equipment, planing-mill products, and plumbing supplies each amounted to over \$50,000.

It should be borne in mind that the above data cover only small- and medium-size building projects. Large-size projects might show a different relationship between labor and material costs, and moreover, there would be a marked difference in the types of materials used.

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## ONE PRODUCT THAT HAS NO SUBSTITUTE

When customers ask for Celotex they are following their own good judgment backed by personal experience, the testimony of friends, or by the facts presented in Celotex advertising.

The wise dealer will not attempt to sell his customers "just as good" insulation for the simple reason that no other insulation offers *all* the advantages of Celotex—a fact most people recognize.

Be sure you have an ample supply of Celotex on hand at all times. The demand is continuous—the market is becoming more active each day. Be prepared to get your share of this profitable business—see your Celotex representative, or write direct.

*All Celotex Cane Fibre Products are Dry Rot and Termite Proofed by the exclusive Ferox Process (patented).*

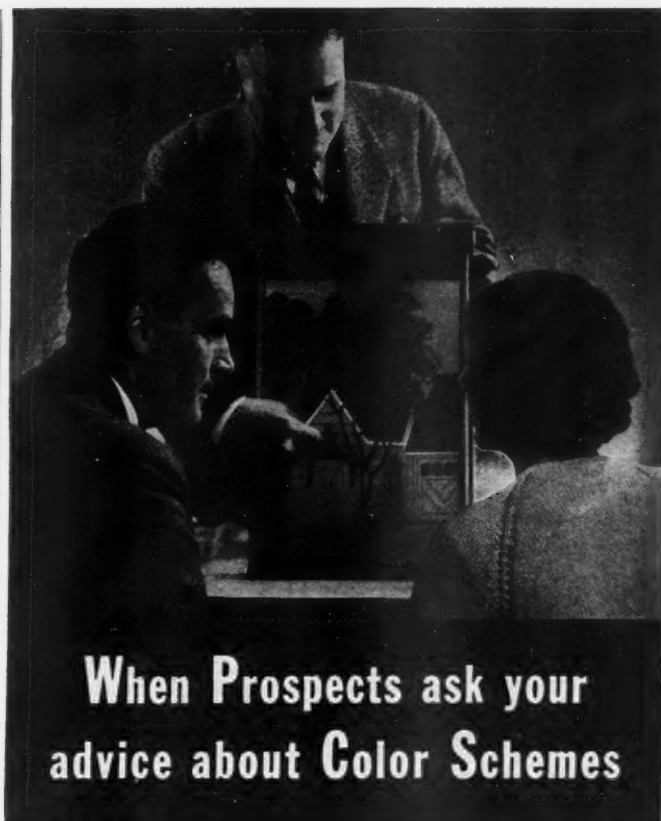
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## When Prospects ask your advice about Color Schemes

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And if you use the Lowe Brothers Pictorial Color Chart, you *can* make definite recommendations. For here, in large, full color illustrations, *made with actual paint*, are correct color schemes for various types of houses and every kind of room.

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PAINTS • VARNISHES  
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# NEWS OF THE MONTH

*Building Activities and Meetings*

## Improved Small Home Market

**A**N INCREASING FACTOR in 1935 real estate activity is the transfer to family ownership of millions of dollars worth of small homes which the savings, building and loan associations were listing among their assets six or seven months ago. On a sales contract basis between \$17,000,000 and \$20,000,000 worth of these properties have been conditionally sold by the associations since January to families which will eventually hold title to them, and small homes totalling several other millions of dollars in value have been bought outright with the aid of mortgage money from the association listing the property.

## Real Estate Bond Prices Up

**A**N ADVANCE of 20.1 per cent in real estate bond prices is indicated for the first six months of 1935. These averages are based on dealer to dealer bids for 200 large issues secured by properties located principally in New York, Boston, Philadelphia, Buffalo and Pittsburgh.

The present average market value per \$1,000 bond for the issues considered in these averages is \$353 as compared to \$294 at the close of 1934 and to \$187 on December 30, 1932. As the 200 issues have a par value of \$512,295,597 outstanding, this indicates an estimated total appreciation since 1932 of \$83,000,000 and an estimated gain of \$29,500,000 in market value since the first of the year.

The major improvement for the six months insofar as type of security is concerned was made by housekeeping apartment issues with an appreciation since the first of the year of 35.9 per cent. Theatres were next in line with a gain of 25.7 per cent.

In market value, theatre issues with a present price of \$484 per \$1,000 are highest, with office building issues, averaging \$409, also showing continued strength.

## Dedicate Safety Trophy

**T**HE BUFFINGTON (Ind.) plant of the Universal Atlas Cement Company used its own products in providing a setting for the Portland Cement Association safety trophy dedicated at the plant on Thursday, June 27. The trophy, a huge concrete monument to the plant's perfect safety record for a year (illustrated below), was installed by the plant on a base of green terrazzo made with Atlas White portland cement, Verdolite marble chips and green pigment. Surrounding this terrazzo slab, which forms a five-foot-wide walk entirely around the trophy, is a four-inch black border of precast terrazzo. This border is made with Atlas Lumnite cement, Belgian black marble and black pigment.



The Portland Cement Association Safety trophy (illustrated at left) was recently dedicated at the Universal Buffington (Ind.) plant signifying a perfect safety record for the past year.



One of the San Diego Fair buildings using Nu-Wood (story below)

## July Residential Building

**A**CCORDING TO F. W. Dodge Corp. reports, residential building contracts in 37 Eastern states for the first half of July amounted to \$21,620,000, indicating a total for the month of about \$43,000,000. Due to seasonal falling off this amount is below the preceding month but is still a good figure, being over twice that for the same period last year.

## Fair Uses Wood Products

**I**N AMERICA'S Exposition at San Diego, Calif., over 100,000 square feet of Nu-Wood interior finish units were used on exhibits, auditoriums, restaurants and villages. Easily the show place of the Exhibit, the "Cafe of the World" is also the show place for these products. Nu-Wood plank has been applied in walls and ceilings of its main dining room, its bar rooms and casino. On the side walls of the central bar room, it has been applied in 45 degree angle matched panels providing attractive interior finish as well as insulation and acoustical correction.

Other outstanding examples of its interior finish application at the San Diego Fair are the auditorium in the "House of Hospitality," the exhibit of the American Telephone and Telegraph Company, in the Hall of Science, the Fair Administration office and the office of the Department of Admissions.

## Housing Projects Continue Under PWA

Included in a statement recently issued by the President defining the types of projects which shall be within the jurisdiction of the Federal Emergency Administration of Public Works and the Works Progress Administration under the Emergency Relief Appropriation Act of 1935, is the fact that projects for slum clearance and low-rent housing shall be carried on by Housing Division of the PWA as heretofore.



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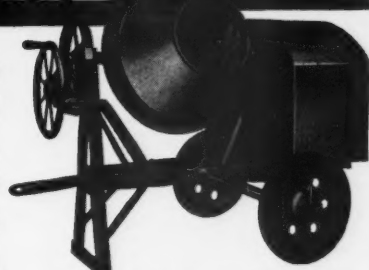
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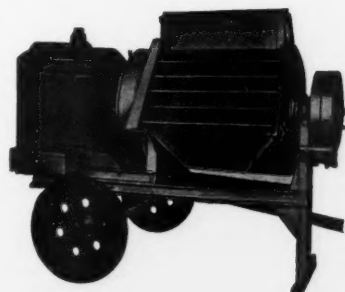
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Full anti-friction bearing. Light weight. Skip shaker. Automatic water tank. Spring mounting. Sizes: 3½-S, 5-S, 7-S, 10-S.



3½-S Trailer — Roller Bearing — Spring Mounting.



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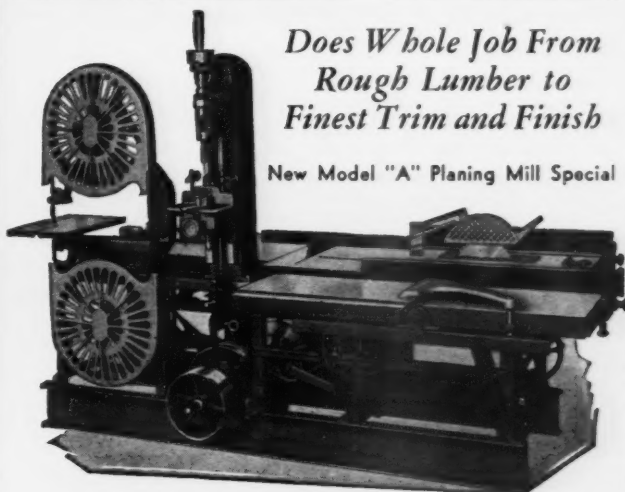
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PORT WASHINGTON WISCONSIN

*Does Whole Job From  
Rough Lumber to  
Finest Trim and Finish*

New Model "A" Planing Mill Special



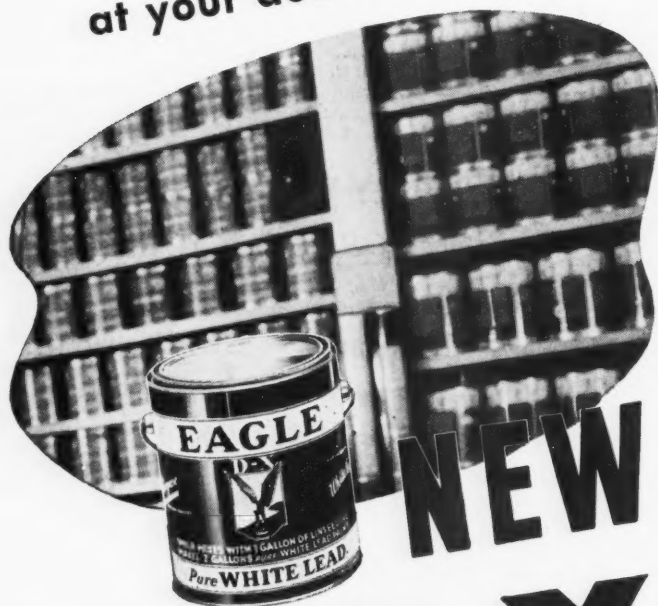
Carpenters—save money and meet every need with this wonderful new Model "A"—8 full-sized machines in all, each independently operated, and all bearings high-grade ball bearing. Sturdy, with least possible excess weight, the Planing Mill Special is built for lasting service. Low operating cost and low price—\$685 without power.

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**NEW**  
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It's easy for contractors to figure the amount of D-X needed for any kind of job. It thins gallon-for-gallon with linseed oil . . . and is ready for brushing in 3 minutes.

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## Free Fabricated

(Continued from page 21)

American Houses, Inc., with headquarters in New York City, has built or has under construction some forty houses. Three are located at White Plains, N. Y., and a number have been built in leading city department stores, including Wanamaker's in New York, which has been inspected by many thousands of people.

The future of American Houses, Inc. is admittedly uncertain as the firm has a difficult problem in its distribution and financing program. As yet it has been found impossible to develop sales to make possible mass production of really low-cost houses.

In spite of the difficulties and defects of the system employed, building industry men may well study with care the construction details of this system. The Moto-Unit developed by this company, consisting of a compact assembly of equipment, is a sound advance in heating, plumbing, air conditioning, bathroom and kitchen fixture practice. If made generally available to the building trade it could do much to reduce house costs.

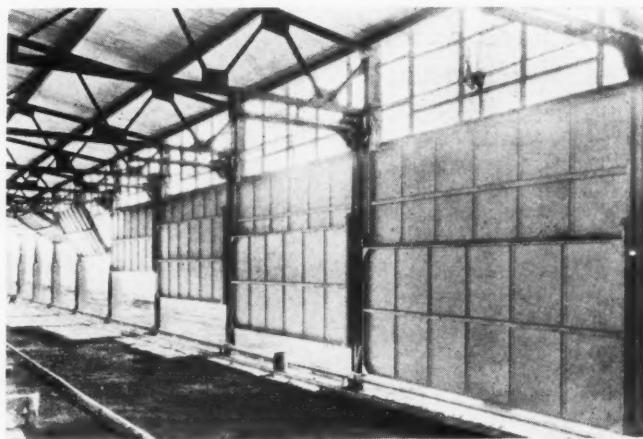
Other construction methods being pioneered by American Houses Inc. suggest interesting developments in building materials. They are all standard building products made for the most part by large and well-known firms.

The public has been led to believe that it will soon be able to buy a prefabricated house which in some mysterious way is completely built in a factory and delivered to the building site wrapped in cellophane. No such house is even being attempted. The methods being used by American Houses, Inc., in which the wall panels come in fairly large sections, is the nearest, present approach to prefabrication. This firm has not yet demonstrated that the use of these larger sections can reduce costs under those of the standard practices now being used.—Joseph B. Mason.

## Electric Garbage Disposal

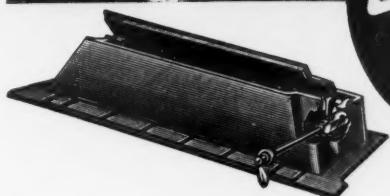
A NEW ELECTRICAL device which grinds waste foods and thereby eliminates the garbage can from the home has been announced by General Electric Company. The device is installed beneath the kitchen sink and grinds and pulpifies all waste foods, including citrus fruit skins, chicken bones and chop bones. Reduced to a fine pulp, this waste food is flushed by water and carried away as part of the sewage stream.

The grinder is a rugged high-speed device. Its speed, with the centrifugal action, results in aerating the food solids. The perfect aeration causes grease in the garbage to coagulate into compact particles and to pass through the pipes without coating or clogging. Water used in the grinding and flushing process is almost negligible. It is estimated by company engineers that in any normal community the increase in the use of water because of this device will amount to but one per cent. The grinder will operate not more than five minutes a day in the average family and its average cost of operation per month will be about one-half that required for operating an electric clock.



ABOVE: The building of Pier 88, New York, for docking the "Normandie" showing some of the 192 Kinnear steel bifolding doors having a total length of 3880 feet. They range in size from 18 to 37 by 18 feet and required 350 tons of steel panels and 700,000 pounds of counterbalancing weights. Special safety locks protect workmen from this crushing load if the chains should break.

## PEERLESS



*dome  
damper*

### OTHER PEERLESS PRODUCTS

Fireplace Fixtures—  
Ash Dumps—Coal  
Windows—Ash Pit  
Doors—Garbage Re-  
ceivers and Hearth  
Fire Gas Heaters

Guarantee perfect operation of the fireplace. Install Peerless Dampers. They eliminate heat loss and unhealthful drafts when the fireplace is not in use.

Peerless dampers will wear a lifetime. Their small cost is repaid hundreds of times by properly burning fireplaces. Made in all standard sizes—three models to choose from—Rotary Control—Poker Control—Chain Control.

*Write for details and prices*

**PEERLESS MANUFACTURING CORP.**

1400 W. Ormsby Ave.

Louisville, Ky.

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## TIMBERTEX SIDINGS

**Job Producers • Profit Makers**



**N**O PROPERTY owner you contact can ignore the amazing sales features of RU-BER-OID-Eternit TimberTex Asbestos-Cement Sidings. These modernizing leaders have the charm and beauty of weathered cypress.

They are rot-proof, age-enduring, termite-defying, fire-proof, and never require painting or staining.

Over old clapboards, wood shingles or stucco side walls, they eliminate upkeep expense, reduce fuel bills, and permanently beautify exteriors. Use these RU-BER-OID business-getters to capture

more modernizing work. Write for free folders and full information.

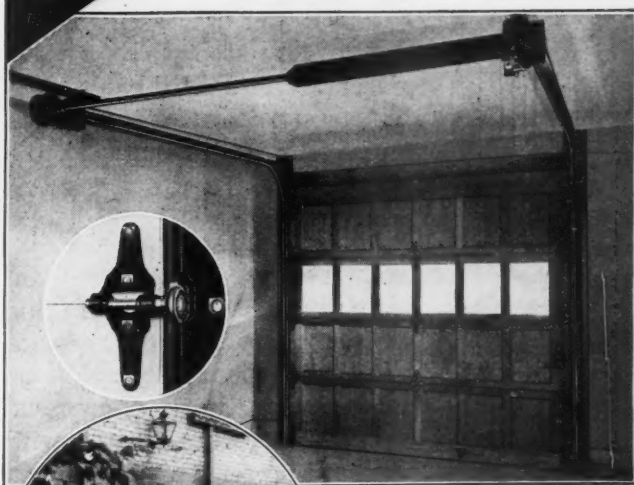
**FREE**

**The RUBEROID Co.**

ROOFING AND BUILDING PRODUCTS

Executive Offices: 500 Fifth Avenue, New York, N.Y.

## before deciding GET THE Facts on ROL-TOP



### SAFETY COUNTER- BALANCE INSURES SATISFACTION

When you get the facts on Rol-Top it's not hard to see why it is preferred by Architects, Builders and Owners the country over. Besides affording year around easy and convenient operation Rol-Top has

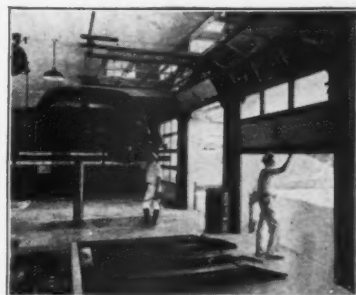
many valuable features all of its own. It is accurately, permanently counterbalanced by a "Safety Counterbalance" . . . no flopping, Jangling springs . . . SAFE in case of spring breakage. Continuous angle mounted tracks are more rigid. A patented "Keystone" type sealing device makes it weathertight . . . without a lot of mechanical contraption. Rol-Top offers so much extra there's nothing to compare with it . . . and it's surprisingly economical.

### Simplified Installation

No effort has been spared to make Rol-Top the easiest to install door on the market . . . erected in approximately 3 hours. Every part is ruggedly constructed . . . providing years of trouble-free service. Rol-Top is built in any size or panel design and can be installed in old or new buildings, for any service need.

### Also Built In Steel

For excessive hard usage or fire protection the Rol-Top can be furnished in steel (or other metals) with any number of sections provided for glass . . . combining great durability with convenience.



Showing lubricator type construction, with hi-lift tracks, which raises the door over the hydraulic lift. Used by Shell, Sinclair, Goodyear and other major companies.

**Mail  
TODAY**

**THE KINNEAR MFG. CO.**

1660-80 Fields Ave.,

Columbus, Ohio

Please send me complete information on your Rol-Top Door. I have noted below the use and size I am most interested in. No obligation.

NAME

ADDRESS

CITY

STATE



## How Do You Know Wood Can Be Protected Against TERMITES?

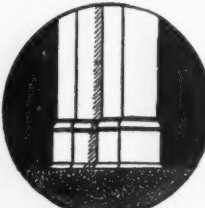
Vulnerable points for Termite damage



1. Plates and corner posts.



2. Sills.



3. Porch columns.



4. Sheathing.

HAVE you ever seen termite attacks stopped by a wood preservative? Probably not. You are largely dependent on others for information in this field.

Reliable data is available regarding termites and their control. Years of study and research have been devoted to this subject. Government agencies and professional associations have put their stamp of approval on wood, pressure treated with standard preservatives. You can safely recommend such treatments.

The findings of authorities on termite defense are clear and unmistakable. All agree that creosote and zinc chloride are time-tested treatments whose success is positive and no longer a matter of conjecture.

AmCreCo timber is pressure treated only with these proved preservatives. The safe way to maintain your reputation as an authority on building matters is to follow the findings of the leading authorities.



AMERICAN CREOSOTING COMPANY

COLONIAL  
CREOSOTING  
COMPANY  
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GEORGIA  
CREOSOTING  
COMPANY  
INCORPORATED

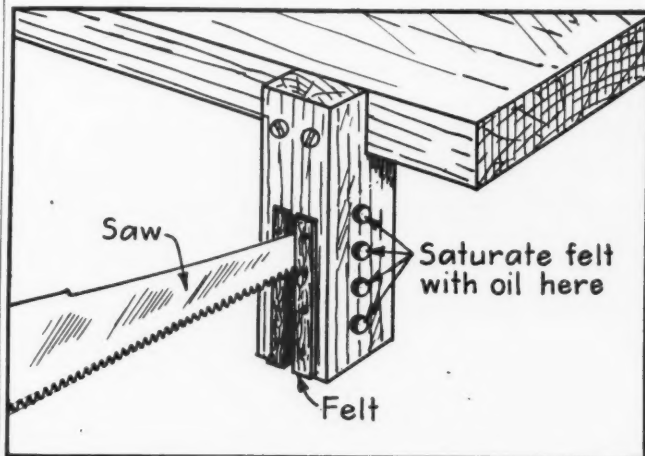
LOUISVILLE — KENTUCKY

## PRACTICAL JOB POINTERS

A READERS' EXCHANGE of tested ideas and methods, taken from their own building experience. Two dollars or a year's subscription to American Builder is paid for each item published. State business connection or trade.

### Hand Saw Oiler

EVERY GOOD SHOP owner knows that his saws should be oiled frequently in order to prevent them from rusting and to make cutting easier. To oil them with a rag and oil can is a common method, but these articles are sometimes not to be found when they are most needed. The drawing shows a very simple but highly efficient device made from a piece of 2x4 one foot long. Cut a slot  $\frac{1}{2}$ -inch wide, then cover the edges with felt. Allow the felt to lap over the sides for nailing. Some  $\frac{1}{2}$ -inch holes are drilled in the sides to oil the felt. Draw the saw between the slot, inserted so that the teeth are in the position shown in the drawing. You will find that this simple arrangement will fill a long felt need in your shop. It can be screwed on the edge of the work bench without being in the way.—A. S. WURZ, Jr., Rockyford, Alta., Can.



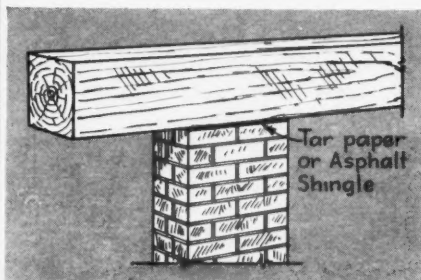
Oiler attached to bench corner

### Preventing Rot Above Piers

I HAVE BEEN reading the *American Builder* for several years and have learned quite a bit from your "Practical Job Pointers." I am enclosing a sketch of one that no doubt a lot of your readers are using, but one I feel a lot more would like to know about.

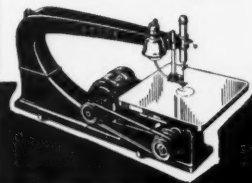
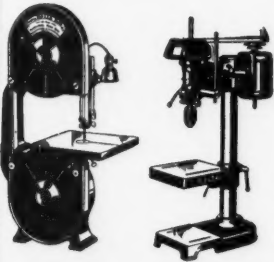
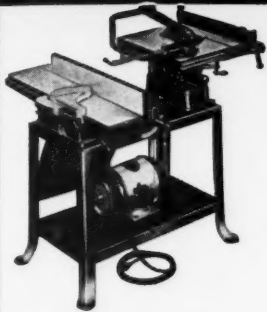
In home building when the sills are ready to be placed upon the piers lay an asphalt shingle on each bearing. This will form a seal against moisture that is absorbed by the piers in damp weather and by so doing will prevent rotting of the sills at the point of contact with the piers.

This is a simple, common sense method that will save many times over the little additional cost.—R. H. PATE, Newman, Ga.



Asphalt shingle on pier to prevent rot.

## NEW DELTA TOOLS SAVE MONEY FOR YOU



Contractors all over the United States are employing these sturdy, efficient Delta tools to reduce their labor costs and save time on Modernization and Repair Work. Delta tools can be taken right out on the job. Although compact and portable they are so skillfully designed and carefully built they turn out clean accurate jobs even under the heavy grind of production work. Best of all they are so moderately priced as to require a minimum initial investment. The complete Delta line includes: Circular Saws, Jointers, Band Saws, Scroll Saws, Drill Presses, Router, Mortising and Sanding Units, Lathes and a complete line of motors, accessories and stands.

For full details, prices, and name of nearest Delta dealer write to

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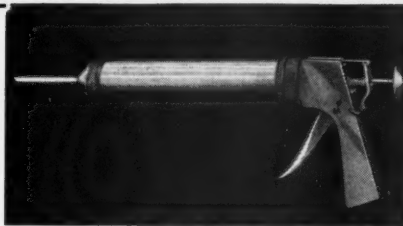
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Milwaukee, Wis.

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for CAULKING  
and GLAZING

GUARANTEED  
ONE YEAR

Albert & Martha Sts.



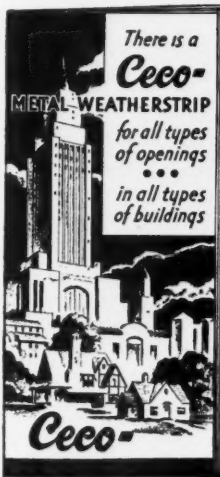
### Entirely NEW Features

No handle springs, dogs, pawls or ratchets. Made in various sizes. Cadmium Finish. Mechanical Accuracy—Super Pressure. Tremendous pressure developed with ordinary effort.

Order Direct or Through Your Jobber  
Send for Descriptive Circular

**ALBION MFG. CO.**

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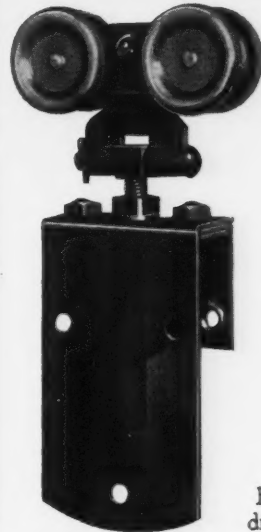
## Ceco WEATHERSTRIPS AND METAL FRAME SCREENS

Increase your sales by using Ceco products that are nationally known and endorsed by architects, builders and home owners. Superior in quality yet cost no more.

Write for complete information on our exclusive dealer proposition.

**CECO WEATHERSTRIP & SCREEN PRODUCTS**  
1926 So. 52nd Avenue Chicago, Illinois  
Division of Concrete Engineering Company

## WAGNER Flexible Door Hanger

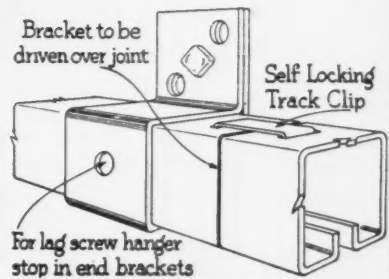


### Wagner Self-Locking Track Clip

Locks sections of track firmly and in perfect alignment. Standard equipment with Wagner track.

Write for new bulletins on these popular Wagner products —also complete line of Hangers, Door Hardware and Overhead Doors. Sold by leading hardware and building material dealers.

An ideal Hanger for farm buildings, garages, small warehouses and many other specialized needs. Flexible joint with connecting pin allows Hanger plate to be fitted to door before hanging. Easy installation plus satisfying service to users.



**WAGNER MANUFACTURING CO.** 835 FIRST STREET  
CEDAR FALLS, IOWA

Serving The Building Trade For Over 33 Years

## MarshTile MEANS MORE JOBS FOR YOU



THE lustrous beauty of tiled walls at a fraction of the cost for material and installation... that's sales-making **MARSH TILE**, the sanitary, long-lived, easily-cleaned wall-finish in large-sized, burnished sheets. **MARSH TILE** can be speedily installed over old walls, using ordinary wood-working tools. Send for descriptive folder with full details. Write to the exclusive manufacturers of **MARSH TILE**, **MARSH WALL TILE COMPANY**, Dover, Ohio.

# MARSH TILE

# WHY?



## WHY is Building Paper Needed in a Home?

**Answer**—It is the "wrapping" which excludes air and moisture. It is the "last ditch" defense against drafty floors, unevenly heated rooms, heat loss through air-leaky walls, and excessive maintenance such as replacing plaster loosened by dampness in ceilings or walls, redecorating dust streaked walls, and resurfacing cupped or warped floors.

## WHY is Strength Needed in Building Paper?

**Answer**—Paper must be handled and put in place under ordinary job conditions before it can function as an air and moisture stop. If it rips and punctures in application, its value is lost. Sisalkraft is reinforced with unspun non-elastic sisal fibers to meet this rigid requirement.

## WHY is Quality Needed in Building Paper?

**Answer**—It is difficult—often impossible—to replace poor paper in a building. If it fails in service, the desired protection cannot be supplied. If you could look right through the walls and see the condition of ordinary paper in service, you would insist on Sisalkraft in every job. Its unbroken asphalt core is protected against oxidizing by the heavy kraft covers.

## WHY is Good Building Paper Economical?

**Answer**—Its total cost is a negligible part of the investment in a home. If it protects the health and comfort of the occupants in addition to the materials in the building, it repays its cost many times over. If it does not actually deliver the desired protection, it is prohibitively expensive at any price.

Sisalkraft is often—and truly—called the biggest value that a building dollar will buy.

**The Sisalkraft Co.**

205 Wacker Drive, Chicago

New York

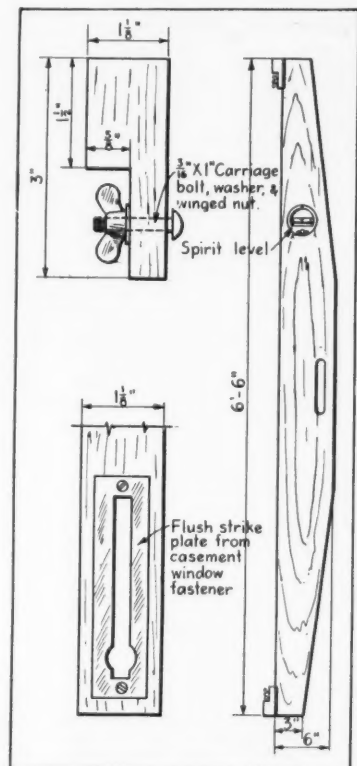
San Francisco

## Combination Straight-edge and Plumb

THE MANY USES of a short straight-edge are probably well known to most builders, but the additional feature of the detachable blocks here described may be of interest to some.

The object of the two blocks, of course, is to allow the straight-edge to span over any bend or irregularity in the frame work being plumbed, thereby gaining greater accuracy than could otherwise be obtained. The metal flush plates that I set into the face of the straight-edge at each end had been left over from some casement window fasteners, and required only the drilling of a hole large enough to receive the head of the bolt in the block.

The blocks are quickly detached and easily carried in the tool box when not in use.—ARTHUR R. WARREN, Builder, Eugene, Ore.







**ACCURATE METAL WEATHER STRIP**

**MEN WANTED**

Write for details regarding jobber set-up. Valuable territory now open to right men. Unlimited opportunity. Quick returns

For 30 years ACCURATE has been the recognized precision-built leader in metal weather strip. Full service co-operation and **RIGHT PRICES.**

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218 East 26th Street, New York

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Increase your profits by selling and installing **TILE-TEX Resilient Floor Tile.**

**TILE-TEX** is a high quality flooring made in many colors and sizes suitable for use in homes, public buildings, stores, etc. The only type of resilient flooring guaranteed to give satisfaction in basements. Easily installed by competent carpenters.

Write today for our free illustrated catalogue, layers' handbook, and dealer's proposition.

**THE TILE-TEX COMPANY**  
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*It's* **a JAEGER**



Recognized biggest value.  
Fast 3 1/2 Trallors. Power Load Tilters 3 1/2, 7, 10S. Non-Tilt 7S to 56S sizes.

**GET OUR LOW PRICES**

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give buyers the permanence, fire safety, beauty and livability they are looking for—at a cost that helps you make a quick, profitable sale.

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*Perfection*  
**BRAND OAK FLOORS**

In old homes or new, whether for renting or selling, "**PERFECTION**" BRAND Oak Floors give service and satisfaction. The greatest value for the money.

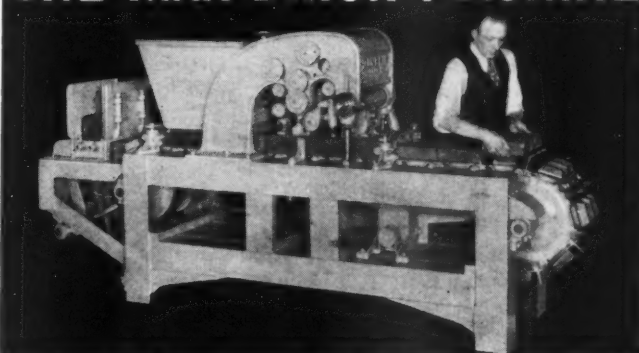
Take advantage of the new Housing Administration Act and sell good Oak Floors on your modernizing jobs.

"**PERFECTION**" BRAND Oak Flooring as furnished by your local dealer is carefully manufactured from selected timber, scientifically seasoned and kiln dried, easily finished. Ask your dealer today to show you the "**PERFECTION**" BRAND.

Complete information is yours for the asking. Write us today. Sold only through retail lumber dealers.

**ARKANSAS OAK FLOORING CO.**  
PINE BLUFF ARKANSAS

## ONE MAN BRICK MACHINE



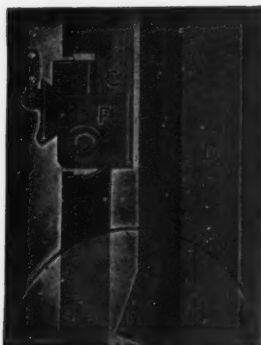
Offers one man in each locality an outstanding manufacturing opportunity. Makes a superior trademarked building unit that brings permanent fireproof construction down to the cost of frame. Uses local materials and labor, and produces 32 brick per minute. Same machine also makes single, double and triple units.

Dunbrik are lighter weight, absolutely uniform, have greater strength, and are water repellent. Face brick can be made in 40 colors and shades.

Present plants show earnings beyond anticipation, yet sell brick at price below competitive products. Let us show you how you can become the exclusive **DUNBRIK** manufacturer in your territory. Ask for "4 KEYS TO SUCCESS." Write today.

**W. E. DUNN MANUFACTURING CO.**  
450 W. 24th St., Holland, Mich.

## "Seal" DOOR ORDERS with "SEAL-TITE"



A simple gravity-operated cam (Fig. B) insures easier opening and tighter closing.

If you have a prospect for over-head type doors, you can depend upon the Ro-Way "Seal-Tite" Feature to get the order "signed, sealed and delivered." Here is one feature that "out-talks" all competitors. Makes doors open much easier and close draft-tight. Available only on—

### RO-WAY OVER-HEAD TYPE DOORS

Other reasons why you have a better chance to land orders with Ro-Way Doors are, *first*—they are priced right; and *second*—Ro-Way installations are simpler in new building and require fewer alterations in old buildings. They leave you more net profit on every job.

#### 16 Different Types for Commercial and Residential Use

with headroom requirements of 8½ to 21 inches. All standard sizes, as well as special sizes and heavy duty doors with special heavy tracking are available. Ask especially about the Ro-Way low priced doors for residence garages and the Ro-Way specially designed torsion spring high lift doors for use in public service stations.

Write for Complete Catalog Folder

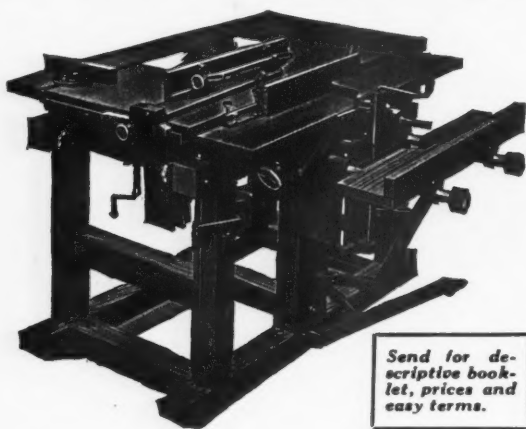
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## There's No Economy in Worn-Out—Out of Date Machinery



Send for descriptive booklet, prices and easy terms.

Modernize your equipment with Monarch machines on our present low price, easy term plan, an opportunity that may never come again.

Install a Monarch Variety Woodworker and enjoy the efficiency of this four-in-one machine—cut off and rip saw with boring attachment, mortiser and jointer.

Other big time and money-saving machines include jointers, band saws, lathes, and the marvelous 20th Century Woodworker.

**AMERICAN SAW MILL MACHINERY CO.**  
60 Main Street Hackettstown, N. J.

## LETTERS from readers on all subjects

Facts, opinions and advice welcomed here

### Passing the Word Along

Kansas City, Mo.

To the Editor:

If available, I would like to have one-half dozen copies of Mr. Dunn's remarks on page 17 of the July *American Builder* headed "NRA Decision and Recovery."

They are right to the point and I want to call them to the attention of the people who apparently do not realize what the elimination of the NRA will mean to American business.

SAMUEL E. EDWARDS, Architect.

### Replies to Newspaper

Wilkesburg, Pa.

To the Editor:

At the top of the enclosed sheet I have attached the last paragraph of the column written by Mr. Elmer C. Walzer, under the title "Somebody's Business" and published in The Pittsburgh Press, Monday evening, May 20. Below it is a copy of the reply I have written Mr. Walzer. It may be well for the builders to know what other people think of them.

Please extend my subscription in accordance with the enclosed coupon. The *American Builder* is the only trade paper I considered worth having during the past five years. It has encouraged me through many low spirited evenings and I have gone out with renewed faith and courage the next morning.

STANLEY Z. BEALL, Retail Lumber Salesman.

Here are the newspaper clipping and Mr. Beall's letter to the author:

"The opportunities for large and small-scale cheating are greatest in home building. Here technology is the most backward. Medieval techniques call for pottering hand labor. Machine production does not protect the home buyer. Instead he is defrauded from the moment he signs with the contractor on the dotted line. From the buying of low-grade materials foisted off as first-class on ignorant consumers to the hand work of carpenters and masons and bricklayers and all their antiquated co-workers, the fine art of jerrybuilding dominates the construction of virtually every home bought by consumers of the medium and low-income brackets."

It is true there are many opportunities for cheating in home building and cheating is practiced equally by both parties to a building contract. My personal experience during 20 years association with the building industry has shown more dishonesty practiced by the building public than by the building tradesmen.

Your statement "Here technology is the most backward," shows lack of knowledge of your subject. Look at any of the modern homes of today and see the great technical improvements in home building. Insulation, weatherstripping, heating, air conditioning, appliances. Compare design, material and mechanical equipment with the home built even 10 years ago.

Pottering hand labor does not prevail in modern building. The craftsman and mechanic of today displays as much skill in building as you do in writing your column and his technique is no more medieval than the presses that print your column. I would advise you to go out on a job and watch good building tradesmen at work.

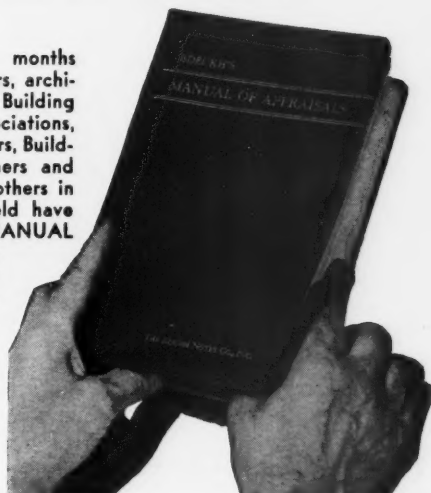
Machine production does protect the home buyer. In the manufacture of lumber: the manufacturing of lumber into doors, windows, trim, built-in features such as kitchen cupboards, etc. Steel, plumbing, heating, electrical appliances, all are of the highest type of machine production. Sand, gravel and cement are dumped into a truck and concrete is mixed en-route to the job.

STANLEY Z. BEALL,  
Department of Sales, Keystone Lumber Company.

# MAKE QUICK, CLOSE ESTIMATES

of Building Costs  
with this new Manual

Within six months 2,500 contractors, architects, banks, Building and Loan Associations, HOLC appraisers, Building Commissioners and Assessors, and others in the building field have adopted the MANUAL and its method. This is a new SECOND EDITION.



With the new BOECKH MANUAL OF APPRAISALS you can in a few minutes estimate closely the cost of constructing a building. In an hour or so, you can make an accurate, detailed appraisal that will stand up when checked by the HOLC or FHA. Handy Work-Sheets insure complete inspection and appraisal.

The MANUAL'S cubic foot tables assure a precise cost figure for practically any building. They cover 97 specified and illustrated types of buildings, in 3,000 sizes. A simple system of credits and deductions corrects them for hundreds of variations in specifications.

It gives data and instructions necessary for appraising property on the basis of Market and Income Values, and an original scientific method for valuing land. Percentage figures from inexpensive new Index Control Number service quickly convert MANUAL base prices into present prices of materials and labor in your locality.

1935. 272 pages, illustrated, 5 1/2 x 8 1/2 inches, flexible Fabrikoid. MANUAL with pad of Work-Sheets, \$5.00. With latest Index Control Numbers for your locality, \$5.50. (Descriptive Circular on Request). Money back if not satisfied.

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## AMERICAN STEEL SHEETS

FOR ALL KNOWN USES

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**Excel in the Building Field**

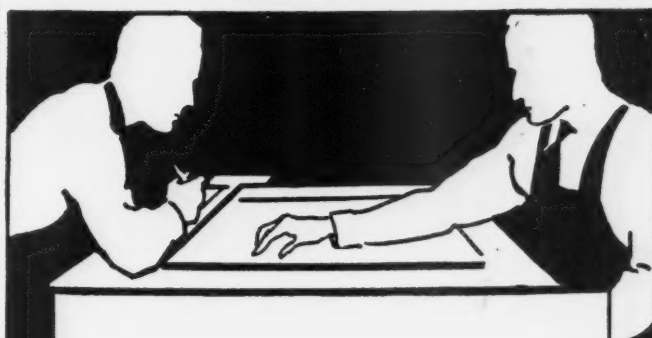
Use sheets of recognized reputation and value. For roofing, siding, gutters, spouting, air conditioning systems, and general sheet metal work—Keystone Copper Steel gives maximum rust resistance.

Insist upon AMERICAN Black Sheets, Keystone Rust Resisting Copper Steel Sheets, Apollo Best Bloom Galvanized Sheets, Galvannealed Sheets, Heavy-Coated Galvanized Sheets, Formed Roofing and Siding Products, Terne Plates, etc. Write for information.

This Company also manufactures U S S STAINLESS and Heat Resisting Steel Sheets and Light Plates for all uses to which these products are adapted.

**AMERICAN SHEET AND TIN PLATE COMPANY, Pittsburgh, Pa.**

SUBSIDIARY of UNITED STATES STEEL CORPORATION



**"I want the pipe to last  
as long as the building."**

**"Then you need Reading  
Genuine Puddled  
Wrought Iron Pipe."**

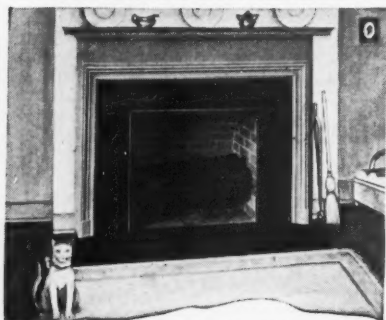
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## THERE IS NO SUBSTITUTE FOR A GENUINE WOOD MANTEL PIECE



Write for our catalog showing 60 Wood Mantels of genuine period design for rooms of any type. Made by craftsmen according to the standards of the finest cabinet furniture from selected, thoroughly seasoned poplar—screwed at joints and sanded to a satin finish ready for decoration. Design shown, (mantel only) No. 688—72" long 52" high, crated f.o.b. Louisville, special this month only \$19.95.

WRITE FOR CATALOGUE

The Brecher Company

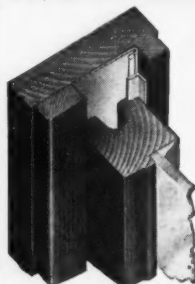
441 West Jefferson Street  
Louisville, Kentucky

## COLUMBIA MANTELS

## WEATHERSTRIP CONTRACTORS

### Make More Money

by  
installing



MONARCH NO. 500  
Self Adjusting

complete information. Monarch is a real money maker.

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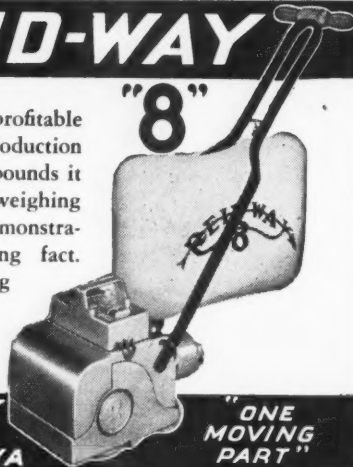


Here is a splendid opportunity to make more money and develop business by installing Monarch Metal Weatherstrips.

The enviable reputation and national acceptance established by Monarch over a period of 30 years, plus the new improved two-member, two-way adjustable weatherstrip, laboratory tested to a high efficiency factor, makes them easy to sell. Entirely different... simple to install... and priced so that you can make big profits. Write today for

## THE REID-WAY

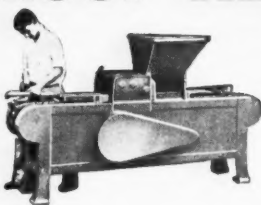
Every contractor can make profitable use of this Reid-Way high production machine. Weighing only 75 pounds it will out-perform machines weighing three times as much. A demonstration will prove this amazing fact. Write for circulars describing the Reid-Way line of "One moving part" sanders.



THE REID-WAY  
2963 FIRST AVE., E.  
CEDAR RAPIDS, IOWA

"ONE  
MOVING  
PART"

## DUNTEX ROOF TILE MACHINE



The National Modernization Campaign has opened a tremendous market for permanent, fireproof roofing. More than 800,000 roofs are needed for replacements alone.

A DUNTEX Line Production Plant offers an outstanding opportunity for you to supply this vast market in your territory. DUNTEX is the

world's most beautiful roof. No other material so fully meets today's demand for beauty, permanence and color. Manufacturing costs are low, investment small, selling prices leave big margin of profit. Write today for booklet R-4.

W. E. DUNN MANUFACTURING CO.

430 W. 23rd St.,

Holland, Mich.

## New Models Bring Building Boom

(Continued from page 23)

—in a state of expectancy of impending events, we seized the opportunity here in Cincinnati of producing a new kind of home, not only new in name, but highly original in design, superior in quality and unusual in materials and construction.

In design we did not seek to ape, imitate or draw on the originality of dead and gone ages. We believe the time has arrived for the present age to form an original architectural conception reflecting the genius of the century in which we live, and one which will be largely imitated in the century yet to come. Albert V. Walters, head of our architectural division has, we believe, succeeded in creating a new and original type of beauty, giving some emphasis to the recreational and leisure features of modern living, and yet investing the whole with a new and imposing dignity reflecting the culture of the owner.

We are incorporating every synthetic product of science; adopting new forms uncluttered with futile mouldings, cornices and flubbings passing for ornament; stone for exterior walls, colorful as possible, eliminating the need for embellishment; steel for framework, eliminating cracked plaster and tile and shrinking joists; water-proofed, concrete roofs; roof terraces covered with tile or slate; concealed drain outlets and copper downspouts; concrete floors cushioned with modern products such as Masonite, rubbertile, cork and other floor covering, and thoroughly insulated with standard materials.

### Buyers Favor New Styles

We are constantly on the alert for new building materials and are striving to use them to obtain the most striking effects in the finished product, and at the same time preserve the use of old, standard materials, for the purpose of presenting them in a new mode.

Out of all this we have evolved something really new and desirable, not art for art's sake, but art for life's sake. Live in the 20th century. Why speak the dead language of the 18th or 19th. To have these new and beautiful things ready to use and then forego their use is like an ass carrying a load of oats and yet eating thistles.

And now as to results. The response of the buying public was spontaneous to such a degree that our estimator is busy from morning till night and sometimes during the night figuring plans. Our architect is rushed turning out sketches and plans for clients. We do not have to build for the market; our contracts are keeping us busy. We are receiving out of town inquiries as far south as Florida to duplicate some of our work now going on in Cincinnati.

A few weeks before we adopted our new policy we were very skeptical as to the business outlook. Public interest in new building was languid. Those who normally should be building were not at all interested. Now instead of lethargy we are finding enthusiasm; instead of price being the important consideration in a buyer's mind, he now is demanding quality, beauty, permanence, and at a greater price if he must pay it. Price competition is therefore eliminated. We believe a new building field can be created by this policy. It brings a new class of people into the building market as well as serving to create and extend the market for new building materials.

Reveries and day dreams of Castles in the Air are now being supplanted by the realization of actually owning and being installed in them, not in the imagination nor in the air, but planted firmly on the ground.

## How to Build Gothic Barn

(Continued from page 49)

This distributes pressure to the gable braces and ends of roof. THIS IS MUCH STRONGER than a six-foot splice of 2x6 end studs and requires about the same amount of material because a 4x10-2' contains 6.67 board feet as compared to 6 bd. ft. for the 6 foot splice. Without this double plate, the gable studs should be 2x8. By all means follow this gable framing shown by the plans.

Note that the stiles, rails and braces are omitted on the outside of all doors. Time has proved that these only retain moisture and promote rot. If used instead of the diagonal backing, all braces, stiles and rails should be on the inside of the door and, preferably, the door hung on the inside of the walls.

Farmers are like all other human beings in that they want the most value they can get for their money. And they don't object to investing a few dollars more if they can get a barn that will be standing when the wind storm has subsided. Barn builders cannot go wrong by featuring this wind-proof gothic. To be convinced, ASK YOUR LUMBER DEALER about its cost. Most dealers have been supplied with a detailed list of material for this barn of any size through the courtesy of Merchandising Council of Retail Lumber Dealer Associations. Such a dealer can quickly figure the cost of the diagonal sheathing that makes a double wall below the mow floor. This will be the only extra cost of this wind-proof gothic as compared to a gothic as ordinarily constructed. And gothic barns cost little or no more than gambrel barns that are properly constructed. Don't sell 1902 model barns in 1935. Ask your lumber dealer for further particulars.

### SKILSAW

**Powerful—Efficient—Dependable!**  
**Thousands Now in Use!**

SKILSAW is, by far, the leading portable electric hand saw in reliability and performance and in the number of satisfied users everywhere. Has more power—size for size, more refinements in construction and design, more applications in sawing work of every kind. Cuts wood, metal, stone and compositions.

**6 Powerful Sizes**  
See your dealer or write for our new complete catalog.

**SKILSAW, INC.**  
3314 Elston Ave., Chicago



The Big Name in

# HEATING

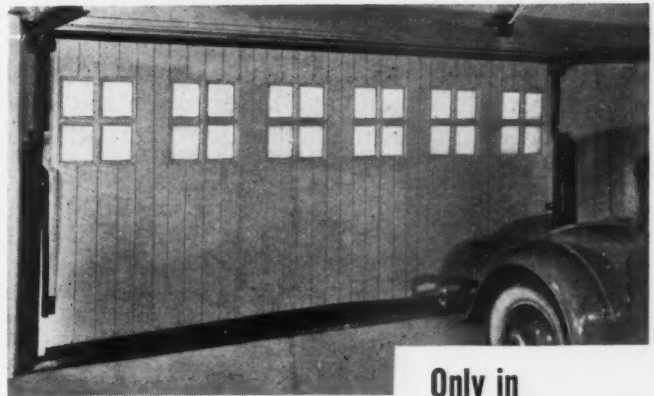
and AIR

# CONDITIONING

is

# MUELLER-MILWAUKEE

## 6 OLD DOORS OPERATED AS 1



Only in  
"Over-the-Top"  
Door Equipment  
Can You Get ALL  
These Features

It doesn't make any difference how unusual the opening or how many doors are required to fill it, there is a size of "Over-the-Top" Door equipment to provide the convenience of overhead operation. A slight pull on the outside handle or a push of a foot inside and the door rises to a full open position automatically. Installation is simple. It's the ideal equipment for modernizing because of its low cost. See "Over-the-Top" Door Equipment at your Dealer's or write for details.

● Applicable to OLD or new doors ●  
Quickly installed without costly fitting to openings up to 18' wide by 12' high ● No weights, pulleys, or excessive trackage ● Easily operated by women and children ● Weather tight—no snow or ice worries ● Popularly priced.

FRANTZ MANUFACTURING CO., Sterling, Ill.

## Over-the-Top Door Equipment

**HERE'S YOUR CHANCE TO MAKE BIG MONEY**

Hard times are over. Lots of remodeling and repair work is being done. Floor surfacing and refinishing jobs are plentiful. You couldn't expect a better opportunity to get into something for yourself.

Be your own boss with an

### AMERICAN FLOOR SANDER

We'll help you get started. No large capital or experience required. Complete information sent without obligation. Write today.

The AMERICAN SPINNER eliminates the drudgery of handscraping edges, stairs and closets. FLOORMEN—Write for circular and demonstration.

**THE AMERICAN FLOOR SURFACING MACHINE COMPANY**  
511 South St. Clair St. Toledo, Ohio



## STUCCO SPRAYING MACHINE



This marvelous machine completely solves the problem for renovating masonry buildings, walls, etc. It fuses a plastic mixture to any masonry surface. This plastic waterproof material fills all cracks and checks. It can be applied in varying thicknesses desired and in 30 colors and shades. Process proven by over six years of actual use under all conditions and in practically every climate.

**OFFERS BIG EARNINGS**

Many operators report costs of only 8c to 10c with sales at 20c to 35c per sq. yd. The profit on one order often pays for machine. Now the big government renovating campaign and the increasing demand for color offers large profits in your territory. Machine furnished on free trial and easy payments. Territory protected. Learn about this wonderful machine and what it has accomplished for others. Send for complete data. Write today.

**COLORCRETE INDUSTRIES, INC.**  
500 Ottawa Ave., Holland, Mich.





# Selected List of Manufacturers' Literature

## For the Service of Builders, Contractors, Architects and Dealers

THE publications listed on this page may be obtained without charge either by using the coupon, listing the numbers of the catalogs desired and mailing to *American Builder*, 105 West Adams Street, Chicago, or by applying on your business stationery to the manufacturers direct, in which case kindly mention this publication. Either the titles or the numbers may be used in ordering. This list is an editorial feature for convenience of our readers.

### OF SPECIAL INTEREST

MEDUSA PORTLAND CEMENT CO., Cleveland, Ohio.

**476—Historical**—"The Story of the Restoration of the Washington Monument," a 12-page brochure of unusual distinction regarding the original construction and the recent repairs to the Washington Monument, Washington, D.C. How the Monument was cleaned and repaired is of special interest to builders.

THE INSULITE CO., Minneapolis, Minn.

**477—Insulation Details**—"Low Cost Home Folder," an attractive home design, fully detailed, to show construction to prevent heat leakage. Heat loss factors through different types of wall, floor, ceiling and roof construction given. Iso-Degree-Day map of the United States included.

WILLIAM MENZEL & SON, 68 Broad St., New York City.

**478—Wood Preserver**—"Ligni-Salvor," a 32-page booklet featuring interesting and notable construction demonstrating use of this material.

THE ANTIMITE CO., St. Louis, Mo.

**479—Termite Control**—"The Termite Primer"; twelve pages of interesting information in simple language about termites their elimination and control.

### BUILDING AND FINISHING MATERIALS

GYPSUM ASSN., 211 W. Wacker Drive, Chicago.

**480—Gypsum Board**—Authoritative information regarding all gypsum board and lath, compiled by the Association. 12 pages, fully illustrated, showing how to apply and finish gypsum wallboard.

STRUCTURAL GYPSUM DIVISION, American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, New York City.

**481—Gypsteel Plank**—A 28-page illustrated handbook under this title, containing specifications and details of Gypsteel Plank construction.

MAPLE FLOORING MANUFACTURERS ASSN., Chicago, Ill.

**482—Hard Maple, Beech and Birch Flooring**—"Grading Rules and Standard Specifications"; 12 pages of standard A.I.A. data on how to specify, lay and finish these high grade floors.

THE YOUNGSTOWN PRESSED STEEL CO., Warren, Ohio.

**483—Enameled Metal Tile**—"Presenting Veos Wall Tile," a big portfolio of photographs showing many successful installations of this enameled metal tile in homes and commercial buildings. Color plates show some of the many decorative schemes. How to handle a Veos job.

NATIONAL FIREPROOFING CORP., Fulton Bldg., Pittsburgh, Pa.

**484—Speedwall Tile**—A series of instructive detailed folders or data sheets presenting the Natco line of Speedwall tile designed especially for low cost housing.

### BUILDING EQUIPMENT

MILWAUKEE STAMPING CO., Milwaukee, Wis.

**485—Metallic Shower Stalls**—"Ferrometal Bathe Rite Shower Stalls" presented in full detail in a new illustrated specification sheet.

KAWNEER CO., Niles, Mich.

**486—Light Aluminum or Bronze Double-Hung Window**—"A New and Better Window, the Light Sealair"; 8 pages,

beautifully illustrated, revealing complete details of Kawneer's new non-rusting, metallic double-hung window for homes.

RICHARDS-WILCOX MANUFACTURING CO., Aurora, Ill.

**487—Folding Partitions**—"Richards-Wilcox FoldR-Way Partitions," a 56-page catalog giving full details of this new line of folding partitions for schools, churches, gymnasiums, etc.

WHITE-STEEL SANITARY FURNITURE CO., Grand Rapids, Mich.

**488—Bathroom Cabinets**—Full information regarding the White-Steel line of bathroom mirrors and mirror cabinets—style in bathroom equipment.

THE F. E. MYERS & BRO. CO., Ashland, Ohio.

**489—Automatic Water Supply Pumps**—"Where Water Runs Dollars Flow"; new information on 4 popular sizes of the Myers rural home water supply system, including electric pump and pressure tank.

WILLIAM B. LUCKE, Wilmette, Ill.

**490—Bathtub Hanger**—"The Lucke Leak Proof Tub Hanger," a beautifully prepared catalog of 12 pages and covers showing how to set bathtubs and shower receptors the Lucke way.

SEDGWICK MACHINE WORKS, 150 W. 15th St., New York City.

**491—Home Elevators**—"The Sedgwick Automatic Brake Invalid Elevator"; new information regarding this well established line of electric residence elevators. Details of installation.

THE F. H. COX CO., Grand Rapids, Mich.

**492—Package Service Cabinet**—"That Ideal Finishing Touch for the Modern Home," an illustrated folder showing in detail how this package receiver, built like a refrigerator, is installed in either brick veneer or stud frame walls.

COPPER BOILER & HEATER WORKS, Manitowoc, Wis.

**493—Hi-Speed Water Heater**—This folder describes an unusually fine product for builders—a Hi-Speed water heater and Life-Time brazed copper boiler. Details of the efficient heater construction of the copper boilers based on years of research in copper construction are given.

THE EDWIN F. GUTH CO., St. Louis, Mo.

**494—Improved Air Circulation**—"Guthfan Conditionaire, Catalog No. 6" describes a new kind of fan which cools comfortably by scientific air circulation.

American Builder,  
105 W. Adams St.,  
Chicago, Ill.

(August, 1935)

Please have the following Catalogs listed in this issue sent me—

Numbers .....

Name .....

Street .....

City ..... State .....

OCCUPATION\* .....

\*Please note that occupation must be stated if full service is to be given.